

**LPDES PERMIT NO. LA0007129, AI No. 2455**

**LPDES FACT SHEET and RATIONALE  
FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA**

**I. Company/Facility Name:** Georgia Gulf Chemicals & Vinyls, LLC  
Georgia Gulf - Plaquemine  
Post Office Box 629  
Plaquemine, LA 70765-0629

**II. Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services  
Post Office Box 4313  
Baton Rouge, Louisiana 70821-4313

**III. Prepared By:** Jenniffer Sheppard  
Water and Waste Permits Division  
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**Date Prepared:** January 10, 2005. Revised on November 14, 2005, January 31, 2006, and March 14, 2006.

**IV. Permit Action/Status:**

A. Reason For Permit Action:

Proposed reissuance of an expired Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2365/40 CFR 122.46\*.

\* In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401 and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 11) will not have dual references.

**LAC 33:IX Citations:** Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

**40 CFR Citations:** Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

B. NPDES permit - NPDES permit effective date: N/A  
NPDES permit expiration date: N/A

EPA has not retained enforcement authority.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 2

- C. LPDES permit - LPDES permit effective date: February 1, 1999
  - LPDES permit expiration date: January 31, 2004
  - LPDES permit modification effective date: March 1, 2003
- D. Application received on January 30, 2004. Additional information received February 22, 2005, January 30, 2006 and information via e-mail on February 7, 2006, February 24, 2006, and by phone on February 27, 2006.

**V. Facility Information:**

A. Location - three miles east of the City of Plaquemine on State Highway 405, at 26100 River Road

B. Applicant Activity -

According to the application, Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine, is an organic and inorganic chemical manufacturer that produces phenol, acetone, alpha-methyl styrene (AMS), polyvinyl chloride (PVC), sodium hydroxide, hydrochloric acid, chlorine, ethylene dichloride (EDC), and vinyl chloride monomer (VCM). There is an Air Separation Unit to supply the facility with nitrogen and oxygen; and a COGEN Unit to produce less costly, more reliable sources of electricity and steam.

Georgia Gulf has also proposed expansions to the existing PVC plant and Diaphragm Cell Plants. Under this proposal, the PVC Plant will undergo an upgrade and enhancement with an estimated 10 percent increase in production. The proposed project for the Diaphragm Cell Plant includes the installation of a membrane cell unit, for increases in production of caustic and chlorine.

C. Technology Basis - (40 CFR Chapter 1, Subchapter N/Parts 401-402, and 404-471 have been adopted by reference at LAC 33:IX.4903)

<u>Guideline</u>	<u>Reference</u>
Organic Chemicals, Plastics, and Synthetic Fibers	40 CFR 414
Process Flow -	Subparts D, F, G, I, and J
**Outfall 202 - 1.344 MGD	
<u>**Outfall 402 - 1.700 MGD</u>	
3.044 MGD	

Inorganic Chemicals-	
Chlor Alkali	40 CFR 415.63
Daily Production - 2,696,000 lbs	Subpart F

Other sources of technology based limits:

LDEQ Stormwater Guidance, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Louisiana Water Quality Management Plan for Sanitary Dischargers.

LDEQ Sanitary General Permits

Best Professional Judgement

LPDES permit effective February 1, 1999.

- D. Fee Rate -  
1. Fee Rating Facility Type: Major  
2. Complexity Type: VI  
3. Wastewater Type: II  
4. SIC codes: 2821, 2812, and 2865

- E. Continuous Facility Effluent Flow - 7.868 MGD.

**VI. Receiving Waters:** Mississippi River (Outfall 002 and 009)  
Bayou LaButte (Outfalls 004, 005, 006, 007, and 008)

**Mississippi River (Outfall 002 and 009)**

1. TSS (15%), mg/L: 42.2
2. Average Hardness, mg/L CaCO<sub>3</sub>: 147.4
3. Critical Flow, cfs: 68391.4 (\*)
4. Mixing Zone Fraction: 1/3
5. Harmonic Mean Flow, cfs: 174765.5 (\*)
6. River Basin: Mississippi River, Segment No. 070301
7. Designated Uses:  
The designated uses are primary contact recreation, secondary contact recreation, fish and wildlife propagation, and drinking water supply.

**Bayou LaButte (Outfalls 004, 005, 006, 007, and 008)**

1. River Basin: Terrebonne, Segment No. 120201
2. Designated Uses:  
The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

Information based on the following: Water Quality Management Plan, Volume 5A, 1994; LAC 33:IX Chapter 11;/Recommendation(s) from the Engineering Section in a memo from Robert Lott to Jenniffer Sheppard dated March 17, 2004. Hardness and 15% TSS data come from monitoring station 53 on the Mississippi River listed in Hardness and TSS Data for All LDEQ Ambient Stations for the Period of Record as of March 1998, LeBlanc.

(\*) Both the critical flow and the harmonic mean of the Mississippi River have been divided between Georgia Gulf (LA0007129, AI2455) and Shintech Plaquemine (LA0120529, AI126578) on a flow weighted basis. This was done since Shintech and Georgia Gulf have similar waste streams and a relatively short distance between their discharge points.

**VII. Outfall Information:**

**Outfall 002**

- A. Type of wastewater - the continuous discharge of the combined effluents from Internal Outfalls 102, 202, 302, and 402. (Note: Outfall 402 does not discharge directly to Outfall 002. Once monitored, water from 402 becomes Utility Water, which is used throughout the facility and may be discharged through any outfall, except Outfalls 008 and 009).

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 4

- B. Location - after the mixing points of internal Outfall 102, 202, and 302 prior discharge into the Mississippi River at Latitude 30°16'22", Longitude 91°10'52", 205.5 M.A.H.P. on the right descending bank.
- C. Treatment - none
- D. Flow - Continuous Flow 7.868 MGD, Max 30 Day.
- E. Receiving waters - Mississippi River
- F. Basin and segment - Mississippi River Basin, Segment 070301
- G. Effluent Data - The effluent data are contained in Appendix C.

Internal Outfall 102

- A. Type of wastewater - the batch internal discharge from combined inorganic treatment (pH control) system outfall to final Outfall 002. Wastewater sources through this discharge outfall include: C/C process, diaphragm cell renewal, operation and maintenance cleaning waters, utility water, turnaround washwaters, tank truck/railcar loading sump waters, miscellaneous vehicle washwaters, hydro test waters from piping and equipment, tank washwaters, some lab sink and floor drain wastewater, potable water, firewater, boiler blowdowns, steam condensates, cooling tower blowdowns, and both process and non-process area stormwater, miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities), previously monitored discharges from Internal Outfall 402, and as an alternate routing wastewaters from the regeneration of demineralizer resins, R.O. reject water, and water well flushes.
- B. Location - after discharge from the pH control system prior to mixing with any other wastewater of Outfall 002 and discharging to the Mississippi River at Latitude 30°16'00", Longitude 91°11'15.
- C. Treatment - treatment of process wastewaters consists of:
  - neutralization
- D. Flow - 1.535 MGD (estimated flow).
- E. Receiving waters - Mississippi River via Final Outfall 002.
- F. Basin and segment - Mississippi River Basin, Segment 070301
- G. Effluent Data - The effluent data are contained in Appendix C.

Internal Outfall 202

- A. Type of wastewater - the continuous discharge of combined wastewaters from the biotreatment system. Wastewater sources to the biotreatment system include: VCM process, VCM process stripper waters, VCM check basin waters, VCM process area stormwater, VCM process area drainage strippers, storage tank vent scrubber waters, shipping area sumps and scrubber waters, sanitary sumps from all facility areas, PVC process, PVC process

stripper waters, PVC process area stormwater, phenol/acetone process, phenol/acetone process wastewater strippers, phenol/acetone gravity separator waters, phenol/acetone wastewater decanter waters, phenol/acetone railcar spill containment waters, marine loading vapor recovery waters, tank truck/railcar loading sump waters, stormwater contacting the Old West Ditch, former methanol process area stormwater, boiler blowdown, firewater, some laboratory sink and floor drain wastewater, steam condensate, utility water, operation and maintenance cleaning waters, recovered groundwater from monitoring/recovery wells, turnaround wash waters, hydrotest waters from piping and equipment, tank washwaters, East Ditch system optionally routed waters, belt filter press filtrate, water from the sludge digestion tank area, previously monitored discharges from Internal Outfall 402, and miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities).

- B. Location - at the point of discharge from the biological treatment system prior to mixing with any other wastewater of Final Outfall 002, at Latitude 30°16'13", Longitude 91°10'48".
- C. Treatment - treatment of the Phenol Plant wastewaters consists of:
  - gravity separation/decantingtreatment of the combined process wastewaters consists of:
  - equalization/neutralization
  - aerobic digestion (activated sludge)
  - settling
  - belt filtration of biosolids
- D. Flow - Continuous Flow 1.344 MGD.

OCPSF Process Wastewater*	1.243 MGD
Process Wastewater*	0.002 MGD
Sanitary Wastewater*	0.355 MGD
Evaporation*	-0.256 MGD

\* Specific component waste streams are defined at Appendix A-2.

- E. Receiving waters - Mississippi River via Final Outfall 002
- F. Basin and segment - Mississippi River Basin, Segment 070301
- G. Effluent Data - The effluent data are contained in Appendix C.

#### Internal Outfall 302

- A. Type of wastewater - the continuous internal discharge of combined cooling tower blowdown, treated process area stormwater, and non-process area stormwater runoff. Sources of this discharge outfall include: R.O. reject water, cooling tower blowdown from the methanol area, Phenol/Acetone, C/C, PVC, VCM, and air separation units; treated process area stormwater from air separation unit; stormwater retention pond water; former VCM emergency pond water; Old West Ditch area stormwater; neutralized demineralizer regeneration waters from the Utilities Unit; stormwater from secondary containment areas for tanks; stormwater from adjacent areas to the PVC resin off loading area; stormwater

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 6

from former areas associated with industrial activity and significant materials areas; COGEN Blowdown; utility water and process water from the COGEN Unit; operation and maintenance cleaning waters; utility water; hydrotest waters from piping and equipment; tank washwaters; potable water; firewater; steam condensates; water well flushes; stormwater from the closed Chlorate Unit; and previously monitored discharges from Internal Outfall 402.

- B. Location - at the point of discharge from the sampling port at the East Ditch Sump prior to mixing with any other wastewaters of Final Outfall 002 at Latitude 30°16'09", Longitude 91°10'47".
- C. Treatment - treatment of wastewaters consists of:
  - neutralization
- D. Flow - Continuous Flow 4.989 MGD.
- E. Receiving waters - Mississippi River via Final Outfall 002
- F. Basin and segment - Mississippi River Basin, Segment 070301
- G. Effluent Data - The effluent data are contained in Appendix C.

Internal Outfall 402

- A. Type of wastewater - the continuous internal discharge of the plant firewater, utility water system, and East Ditch of combined wastewaters from the PVC treatment system including process wastewaters and process and non-process area stormwater from the PVC unit, stormwater from the PVC resin off loading area, and potable water that has come into contact with process areas (Note: Outfall 402 becomes Utility Water, which is used throughout the facility and wastewater derived from Utility Water may be discharged through any outfall, except Outfalls 008 and 009).
- B. Location - at the point of discharge downstream of the Reuse/Recycle facility between 2nd and 3rd Avenues adjacent to E Street prior to mixing with other wastewater or water, at Latitude 30°15'36", Longitude 91°11'25".
- C. Treatment - treatment of wastewaters consists of:
  - filtration
  - disinfection (chlorine)
  - Reuse
- D. Flow - Continuous Flow 1.700 MGD.

OCPSF Process Wastewater\* 1.700 MGD

\* Specific component waste streams are defined at Appendix A-3.

- E. Receiving waters - plant utility water feeding Internal Outfalls 102, 202, and 302.
- F. Basin and segment - Mississippi River Basin, Segment 070301

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455

Page 7

- G. Effluent Data - The effluent data are contained in Appendix C.

Outfall 004

- A. Type of wastewater - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, railcar tracks, the adjacent Shintech property. Other sources of this discharge include rinse waters from facility truck washing area, potable water, firewater, and previously monitored discharges from Internal Outfall 402.
- B. Location - at the point of discharge in the southeast corner of the facility, prior to passage under the railroad tracks and combining with waters of the parish drainage system discharging in Bayou LaButte at Latitude 30°14'34", Longitude 91°11'25".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Bayou LaButte drainage system
- F. Basin and segment - Terrebonne Basin, Segment 120201

Outfall 005

- A. Type of wastewater - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, and railcar tracks. Other sources of this discharge include rinse waters from facility truck washing areas, potable water, firewater, and previously monitored discharges from Internal Outfall 402.
- B. Location - at the point of discharge from the south side of the facility, at the railroad tracks and prior to combining with waters of the parish drainage system discharging in Bayou LaButte at Latitude 30°14'30", Longitude 91°11'30".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Bayou LaButte drainage system
- F. Basin and segment - Terrebonne Basin, Segment 120201

Outfall 006

- A. Type of wastewater - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, the contractor parking lot and railcar tracks, non-process area stormwater from the Air Separation Unit, undeveloped areas on the west side of the facility, and from the adjacent Air Liquide facility. Other sources of

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 8

this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.

- B. Location - at the point of discharge on the south side of the facility, after the land farm and prior to combining with waters of the parish drainage system discharging in Bayou LaButte at Latitude 30°14'28", Longitude 91°11'48".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Bayou LaButte drainage system
- F. Basin and segment - Terrebonne Basin, Segment 120201

Outfall 007

- A. Type of wastewater - the intermittent discharge of stormwater from the north and west portions of the facility. Sources of this discharge include stormwater from the north side of the facility (near the marine loading pipe rack, administrative parking lot, main facility access road, environmental/industrial relations parking lot, waste storage bins and drums area, and inorganic treatment system area), stormwater from the west side of the facility (near PVC parking lot, cemetery, C/C personnel parking lot, finish vinyl product testing area), stormwater impacted by grass/plant cutting from Parish roadside ditch maintenance, and non-process area stormwater from the Air Separation Unit. Other sources of this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.
- B. Location - at a point in the ditch on the west side of the facility near the west side of the Air Separation Unit prior to combining with waters of the Parish drainage system discharging into Bayou LaButte at Latitude 30°15'19", Longitude 91°11'39".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Bayou LaButte drainage system
- F. Basin and segment - Terrebonne Basin, Segment 120201

Outfall 008

- A. Type of wastewater - the intermittent discharge of car wash wastewater.
- B. Location - at a point in the ditch in the northwest area of the facility adjacent to the pH basin prior to combining with any other waters, Latitude 30°16'00", Longitude 91°11'00".
- C. Treatment - None
- D. Flow - Intermittent

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 9

- E. Receiving waters - Bayou LaButte drainage system
- F. Basin and segment - Terrebonne Basin, Segment 120201

Outfall 009

- A. Type of wastewater - the intermittent discharge of firewater and river water from the dock area.
- B. Location - at a point of discharge from the dock into the Mississippi River, Latitude 30°17'00", Longitude 91°11'00".
- C. Treatment - None
- D. Flow - Intermittent
- E. Receiving waters - Directly into the Mississippi River
- F. Basin and segment -Mississippi River Basin, Segment 070301

**VIII. Proposed Permit Limits:**

The specific effluent limitations and/or conditions will be found in the draft permit. Development and calculation of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current NPDES Permit:

- A. Internal Outfall 102 - the monitoring frequencies for Total Lead and Total Nickel have been reduced from 1/week to 1/month and Total Copper has been reduced from 1/week to 2/month for based on good compliance history and the USEPA document, *Monitoring Frequency Reduction Interim Guidance*.
- B. Internal Outfall 102 - Inorganic chemical production (under 40 CFR 415.63) increased from 2,600,000 lbs/day to 2,696,000 lbs/day, causing a slight increase in permit limitations for TSS at this Outfall.
- C. Internal Outfall 202 - the monitoring frequencies for Total Copper, Total Nickel, and TRC have been reduced from 1/week to 1/month, and TOC from 3/week to 1/week. These reductions are based on good compliance history and the USEPA document, *Monitoring Frequency Reduction Interim Guidance*.
- D. Internal Outfall 202 - Due to a decrease in flow from 1.848 MGD to 1.344 MGD, OCPSF limitations have decreased.
- E. Internal Outfall 302 - the monitoring frequency for COD has been reduced from 1/day to 3/week based on good compliance history and the USEPA document, *Monitoring Frequency Reduction Interim Guidance*.
- F. Internal Outfall 302 - Continuous monitoring on pH has been incorporated at this outfall per recommendation of EPA, Region 6 after the January 10, 2005 NPDES Compliance Inspection.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 10

- G. Internal Outfall 402 has been established for monitoring the facility's commingled OCPSF-regulated waste streams prior to treatment at Georgia Gulf's wastewater treatment plant. Mass limitations for the pollutants regulated under 40 CFR 414 Subpart J are applied at Internal Outfall 402.
- H. Internal Outfall 402 - Outfall flow has increased from 1.491 MGD to 1.700 MGD, therefore, effluent limitations have increased in accordance with 40 CFR 414 Subpart J.
- I. Outfalls 004, 005, and 006 - Monitoring frequencies for Chloroform, 1,2-Dichloroethane, Phenol, and Vinyl Chloride have been reduced from 1/quarter to 1/6 months. Georgia Gulf was previously granted a reduction to these parameters in accordance with Part II.O of the current LPDES permit requiring the reported results for these parameters to be less than the respective MQL values for a period of two years.
- J. Outfall 004 - The action level for TSS has been removed from this outfall at the request of the permittee. Outfall 004 is located in an Iberville Parish ditch and runoff to it is not under Georgia Gulf's control. This parish ditch, on the east side of the landfarm, is maintained by the parish and receives runoff from adjacent property that was farmland and is currently the construction site of the new Shintech facility. The runoff shall be addressed in Georgia Gulf's Stormwater Pollution Prevention Plan to address runoff from its landfarm and the practices that are intended to limit the discharge of suspended solids from the landfarm. Therefore, the permit establishes TSS monitoring and reporting only.
- K. A company request to remove Outfall 008 has been withdrawn.
- L. Outfall 009 - Newly proposed outfall to cover fire protection system discharges from Georgia Gulf's dock. Reporting requirements include a flow estimate and oil and grease visible sheen. These parameters are to be recorded for each discharge event.
- M. Establish Part II condition for storm water discharges associated with industrial activities, in accordance with LAC 33:IX.2707.I.3 and 4 [40 CFR 122.44(I)(3) and (4)].
- N. Establish Part II condition to develop, maintain, and implement a response plan identifying the procedures followed when there is an action level exceedance at Internal Outfall 302.
- O. A company request to include miscellaneous leaks and spills as part of their outfall descriptions has been denied. Discharges of this nature are subject to the terms and conditions set forth in Part III.D.9 of the permit.
- P. Establish condition under Part II.N requiring Georgia Gulf to prepare, implement, and maintain a response plan within 6 months of the effective date of this permit, requiring Georgia Gulf to clearly outline the procedures followed for action level exceedances. This condition has been incorporated per recommendation of EPA, Region 6 after the January 10, 2005 NPDES Compliance Inspection.
- Q. Establish condition under Part II.O to address reporting requirements for the dock fire protection system.

**IX. Permit Limit Rationale:**

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. Also set forth are any calculations or other explanations of the derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under LAC 33:IX.2707/40 CFR Part 122.44 and reasons why they are applicable or an explanation of how the alternate effluent limitations were developed.

**A. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS**

Following regulations promulgated at LAC 33:IX.2707.L.2.b/40 CFR Part 122.44(I)(2)(ii), the draft permit limits are based on either technology-based effluent limits pursuant to LAC 33:IX.2707.A/40 CFR Part 122.44(a) or on State water quality standards and requirements pursuant to LAC 33:IX.2707.D/40 CFR Part 122.44(d), whichever are more stringent.

**B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS AND CONDITIONS**

Regulations promulgated at LAC 33:IX.2707.A/40 CFR Part 122.44(a) require technology-based effluent limitations to be placed in LPDES permits based on effluent limitations guidelines where applicable, on BPJ (best professional judgement) in the absence of guidelines, or on a combination of the two. The following is a rationale for types of wastewaters. See outfall information descriptions for associated outfall(s) in Section VII.

1. Outfall 002 -the continuous discharge of the combined effluents from Internal Outfalls 102, 202, 302, and 402. (Note: Outfall 402 does not discharge directly to Outfall 002. Once monitored, water from 402 becomes Utility Water, which is used throughout the facility and may be discharged through any outfall, except Outfalls 008 and 009).

**Site-Specific Consideration(s)**

Limitation for pH is based on the existing permit and LAC 33:IX.1113.C.1

The existing permit condition requiring Temperature monitoring has been retained.

Oil & Grease limitations have been retained from the current permit. This was done in the previous permit in lieu of assigning requirements on Internal Outfalls 102, 202, and 302.

Hexachlorobenzene limitations were originally established as water quality based limitations in the January 1999 LPDES permit. The limitations have been decreased from the previous permit due to the critical flow and the harmonic mean of the Mississippi River being divided between Georgia Gulf (LA0007129, AI2455) and Shintech Plaquemine (LA0120529, AI126578) on a flow weighted basis. This was done since Shintech and Georgia Gulf have similar waste streams and a relatively short distance between their discharge points.

Internal Outfall 402 has been established for monitoring the facility's commingled OCPSF-regulated waste streams prior to treatment at Georgia Gulf's wastewater treatment plant. Mass limitations, regulated under 40 CFR 414 Subpart J, are applied at Internal Outfall 402. After treatment down to OCPSF Guidelines, the wastewater from this outfall will be reused

as utility water, cooling tower source water, fire water, etc. throughout the facility and may be discharged through any outfall.

2. Internal Outfall 102 -the batch internal discharge from combined inorganic treatment (pH control) system outfall to final Outfall 002. Wastewater sources through this discharge outfall include: C/C process, diaphragm cell renewal, operation and maintenance cleaning waters, utility water, turnaround washwaters, tank truck/railcar loading sump waters, miscellaneous vehicle washwaters, hydro test waters from piping and equipment, tank washwaters, some lab sink and floor drain wastewater, potable water, firewater, boiler blowdowns, steam condensates, cooling tower blowdowns, and both process and non-process area stormwater, miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities), previously monitored discharges from Internal Outfall 402, and as an alternate routing wastewaters from the regeneration of demineralizer resins, R.O. reject water, and water well flushes.

a. Process Wastewaters

Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Chlor-alkali Diaphragm Cell	40 CFR 415.63 Subpart F

Production: 2,696,000 lbs/day

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

**Site-Specific Consideration(s)**

The Report only monitoring requirements for COD have been retained from the existing LPDES permit.

The production level used in calculations for the existing LPDES permit issued in January 1999, was 2,600,000 lbs/day. The proposed effluent limitations for TSS, Total Copper, Total Lead, and Total Nickel were calculated based on the production level of 2,696,0000 lbs/day, as listed in the permit application.

3. Internal Outfall 202 -the continuous discharge of combined wastewaters from the biotreatment system. Wastewater sources to the biotreatment system include: VCM process, VCM process stripper waters, VCM check basin waters, VCM process area stormwater, VCM process area drainage strippers, storage tank vent scrubber waters, shipping area sumps and scrubber waters, sanitary sumps from all facility areas, PVC process, PVC process stripper waters, PVC process area stormwater, phenol/acetone process, phenol/acetone process wastewater strippers, phenol/acetone gravity separator waters, phenol/acetone wastewater decanter waters, phenol/acetone railcar spill containment waters, marine loading vapor

recovery waters, tank truck/railcar loading sump waters, stormwater contacting the Old West Ditch, former methanol process area stormwater, boiler blowdown, firewater, some laboratory sink and floor drain wastewater, steam condensate, utility water, operation and maintenance cleaning waters, recovered groundwater from monitoring/recovery wells, turnaround wash waters, hydrotest waters from piping and equipment, tank washwaters, East Ditch system optionally routed waters, belt filter press filtrate, water from the sludge digestion tank area, previously monitored discharges from Internal Outfall 402, and miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities).

a. Process Wastewaters

Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guidelines</u>
Organic chemical manufacturing	40 CFR 414
PVC	Subpart D
VCM, EDC, Phenol, Acetone, Methanol	Subpart F
AMS	Subpart G
End of Pipe Biological Treatment	Subpart I

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

**Site-Specific Consideration(s)**

The existing permit condition requiring Temperature monitoring has been retained.

Parameters associated with the methanol process such as copper, nickel, and zinc were incorporated into the existing LPDES permit and limits were set as a metal bearing stream associated with methanol manufacturing. According to Georgia Gulf Chemical & Vinyls, LLC the Methanol Unit has been shut down, however, effluent analysis shows the presence of these pollutants in this discharge. Therefore, the parameters and limitations for Total Copper, Total Zinc, and Total Nickel have been retained.

TRC limitations have also been retained from the January 1999 LPDES permit.

4. Internal Outfall 302 -the continuous internal discharge of combined cooling tower blowdown, treated process area stormwater, and non-process area stormwater runoff. Sources of this discharge outfall include: R.O. reject water, cooling tower blowdown from the methanol area, Phenol/Acetone, C/C, PVC, VCM, and air separation units; treated process area stormwater from air separation unit; stormwater retention pond water; former VCM emergency pond water; Old West Ditch area stormwater; neutralized demineralizer regeneration waters from the Utilities Unit; stormwater from secondary containment areas for tanks; stormwater from adjacent areas to the PVC resin off loading area; stormwater from former areas associated with industrial activity and significant materials areas; COGEN Blowdown; utility water and process water from the COGEN Unit; operation and

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 14

maintenance cleaning waters; utility water; hydrotest waters from piping and equipment; tank washwaters; potable water; firewater; steam condensates; water well flushes; stormwater from the closed Chlorate Unit; and previously monitored discharges from Internal Outfall 402.

a. Utility Wastewater and stormwater

**Site-Specific Consideration(s)**

Per request of EPA, Region VI, continuous monitoring for pH has been incorporated at this outfall with pH excursion provisions explained in the proposed permit, Part II. I.

COD limitations are retained from the existing permit.

Free Available Chlorine limits were based on the EPA Effluent Guidelines and Standards for Steam Electric Power Generating, 40 CFR 423.13, for once through cooling water. The limits were established at 0.2 mg/l average concentration and 0.5 mg/l maximum concentration. These limitations are retained from the existing permit due to the presence of chlorine at this outfall.

Phenol, Vinyl Chloride, 1,2-Dichloroethane (EDC), and Chloroform limits are being retained from the current permit due to the existence of organics in Outfall 302 due to de minimis leaks and spills, monitoring requirements for organic contaminants are being applied to this Outfall by BPJ. The organics that are likely to be associated with the wastewaters generated at this facility are given the following requirements:

Phenol	Report
Vinyl Chloride	Report
1,2-Dichloroethane (EDC)	Report
Chloroform	Report

In addition, language in Part II.N of the draft permit was retained. This portion of the permit requires effluent from Outfall 302 for which any analytical values exceed the action levels established below, be routed to the biological surge tank (BST) for treatment prior to discharge through Outfall 202.

Action levels for vinyl chloride and 1,2-Dichloroethane (EDC) are based on the daily maximum effluent value of 40 CFR 414, Subpart I. Action levels for Phenol and Chloroform are based on the State's empirical values for uncontaminated stormwater discharges.

**Action Levels for Outfall 302**

Phenol	100 µg/l
Vinyl Chloride	268 µg/l
1,2-Dichloroethane (EDC)	211 µg/l
Chloroform	100 µg/l

A new condition has been established under Part II.N requiring Georgia Gulf to prepare, implement, and maintain a response plan within 6 months of the effective date of this permit, requiring Georgia Gulf to clearly outline the procedures followed for action level exceedances. This condition has been incorporated per recommendation of EPA, Region 6 after the January 10, 2005 NPDES Compliance Inspection.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 15

5. Internal Outfall 402 - the continuous internal discharge of the plant firewater, utility water system, and East Ditch of combined wastewaters from the PVC treatment system including process wastewaters and process and non-process area stormwater from the PVC unit, stormwater from the PVC resin off loading area, and potable water that has come into contact with process areas (Note: Outfall 402 becomes Utility Water, which is used throughout the facility and wastewater derived from Utility Water may be discharged through any outfall, except Outfalls 008 and 009).

a. Process Wastewaters

Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine is subject to Best Practicable Control Technology Currently Available (BPT) and Best Available Technology Economically Achievable (BAT) effluent limitation guidelines listed below:

<u>Manufacturing Operation</u>	<u>Guideline</u>
Organic chemical manufacturing	40 CFR 414, Subpart(s) D and J.

Calculations and basis of permit limitations are found at Appendix A and associated appendices. See below for site-specific considerations.

**Site-Specific Consideration(s)**

This outfall has been established for monitoring the facility's commingled OCPSF-regulated waste streams prior to treatment at Georgia Gulf's wastewater treatment plant. Mass limitations, regulated under 40 CFR 414 Subpart J, are applied at Internal Outfall 402. After treatment down to OCPSF Guidelines, the wastewater from this outfall will be reused as utility water, cooling tower source water, fire water, etc. throughout the facility and may be discharged through any outfall.

Effluent limitations for TOC were derived using the TOC/BOD<sub>5</sub> ratio retained from the January 1999 LPDES permit for this outfall.

6. Outfall 008 -the intermittent discharge of carwash wastewater.

a. Utility

Utility wastewater being discharged to discrete outfalls from this facility shall receive BPI limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly	Daily
	Average mg/L	Maximum mg/L
Flow, MGD	Report	Report
COD	N/A	300
TSS	N/A	45
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

**Site-Specific Consideration(s)**

Flow, COD, TSS, Oil & Grease, & pH have been retained from the existing LPDES permit. These parameters and limitations are consistent with LDEQ's Light Commercial General Permit, LAG480000.

7. Outfall 009 -the intermittent discharge of firewater from the dock.

a. Utility Discharges

Utility wastewaters being discharged to this outfall shall receive the following requirements:

Flow- Report

Oil and Grease (Visible Sheen)- Observation

**Site-Specific Consideration(s)**

The Flow and Oil and Grease (Visible Sheen) - reporting requirements were established to address the discharge of firewater and river water from the dock area. The source water being discharged through this outfall includes a mixture of lime softened-pH neutralized well water, previously monitored PVC reuse/recycle water from Outfall 402, and untreated Mississippi River water. The combined mixture of lime softened-pH neutralized well water and previously monitored PVC reuse/recycle water from Outfall 402 will be referred to as the fire water source and untreated Mississippi River water will be referred to as the river water source.

Due to the permittee's inability to capture a representative sample of the discharge, Part II.O of the permit establishes guidelines the source water must meet prior to discharging through this outfall.

8. Outfalls 004, 005 and 006

\*Outfall 004 - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, railcar tracks, the adjacent Shintech property. Other sources of this discharge include rinse waters from facility truck washing area, potable water, firewater, and previously monitored discharges from Internal Outfall 402

\* Outfall 005 - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, and railcar tracks. Other sources of this discharge include rinse waters from facility truck washing areas, potable water, firewater, and previously monitored discharges from Internal Outfall 402.

\* Outfall 006 - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, the contractor parking lot and railcar tracks, non-process area stormwater from the Air Separation Unit, undeveloped areas on the west side of the facility, and from the adjacent Air

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 17

Liquide facility. Other sources of this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.

a. - Utility and Stormwater

Utility and stormwater runoff being discharged to discrete outfalls from this facility receive BPJ limitations/monitoring requirements according to the following schedule:

Flow - Report  
pH - 6.0 - 9.0 Standard Units  
TOC - 50 mg/L, daily max  
Oil and Grease - 15 mg/L, daily max  
TSS - Report  
Total Chromium - Report  
Total Copper - Report  
Total Nickel - Report  
Total Zinc - Report  
Chloroform - Report  
1,2-Dichloroethane - Report  
Phenol - Report  
Vinyl Chloride - Report

**Site-Specific Consideration(s)**

Flow, TOC, Oil & Grease, & pH have been retained from the existing LPDES permit. These parameters and limitations are consistent with LDEQ's current guidance on stormwater discharges.

The pollutants, Total Copper, Total Nickel, Total Zinc, Chloroform, 1,2-Dichlorethane (EDC), Phenol, Vinyl Chloride were all retained from the existing permit based on wastewater treatment plant biosolids from Internal Outfall 202 being found on the landfarm. Main process pollutants from Internal Outfall 202 were given the action levels listed below based on the State's empirical values for uncontaminated stormwater discharges.

Effluent Characteristic:	Daily Maximum µg/l
Total Copper	500
Total Nickel	500
Total Zinc	1000
Chloroform	100
1,2-Dichloroethane	100
Phenol	100
Vinyl Chloride	100

Total Chromium has been retained from the existing LPDES permit. A review of effluent analysis shows the presence of this pollutant. The action level will be as follows:

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 18

Effluent Characteristic:	Daily Maximum $\mu\text{g/l}$
Total Chromium	150

The action level for TSS has been removed from Outfall 004 at the request of the permittee. Outfall 004 is located in an Iberville Parish ditch and runoff to it is not under Georgia Gulf's control. This parish ditch, on the east side of the landfarm, is maintained by the parish and receives runoff from adjacent property that was farmland and is currently the construction site of the new Shintech facility. The runoff shall be addressed in Georgia Gulf's Stormwater Pollution Prevention Plan to address runoff from its landfarm and the practices that are intended to limit the discharge of suspended solids from the landfarm. Therefore, the permit establishes TSS monitoring and reporting only.

A maximum concentration action level for TSS (100 mg/l) has been retained from the existing permit for Outfalls 005 and 006 based on the Multi-Sector General Permit, Sector L (Landfills and Land Application Sites). This was originally proposed by the permittee, as stated in the April 12, 1998 Fact Sheet.

9. Outfall 007 -the intermittent discharge of stormwater from the north and west portions of the facility. Sources of this discharge include stormwater from the north side of the facility (near the marine loading pipe rack, administrative parking lot, main facility access road, environmental/industrial relations parking lot, waste storage bins and drums area, and inorganic treatment system area), stormwater from the west side of the facility (near PVC parking lot, cemetery, C/C personnel parking lot, finish vinyl product testing area), stormwater impacted by grass/plant cutting from Parish roadside ditch maintenance, and non-process area stormwater from the Air Separation Unit. Other sources of this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.

a. Utility and Stormwater Discharges

Utility and stormwater runoff being discharged to discrete outfalls from this facility shall receive BPJ limitations in accordance with this Office's guidance on stormwater, letter dated 6/17/87, from J. Dale Givens (LDEQ) to Myron Knudson (EPA Region 6).

Parameter	Monthly Average mg/L	Daily Maximum mg/L
Flow, MGD	Report	Report
TOC	N/A	50
Oil and Grease	N/A	15
pH, Std. Units	6.0 (min)	9.0 (max)

**Site-Specific Consideration(s)**

Flow, TOC, Oil & Grease, & pH have been retained from the existing LPDES permit. These parameters and limitations are consistent with LDEQ's current guidance on stormwater discharges.

In accordance with LAC 33:IX.2707.I.3 and 4 [40 CFR 122.44(I)(3) and (4)], a Part II condition is proposed for applicability to all storm water discharges from the facility, either through permitted outfalls or through outfalls which are not listed in the permit or as sheet flow. The Part II condition requires a Storm Water Pollution Prevention Plan (SWP3) within six (6) months of the effective date of the final permit, along with other requirements. If the permittee maintains other plans that contain duplicative information, those plans could be incorporated by reference to the SWP3. Examples of these type plans include, but are not limited to: Spill Prevention Control and Countermeasures Plan (SPCC), Best Management Plan (BMP), Response Plans, etc. The conditions will be found in the draft permit. Including Best Management Practice (BMP) controls in the form of a SWP3 is consistent with other LPDES and EPA permits regulating similar discharges of stormwater associated with industrial activity, as defined in LAC 33:IX.2522.B.14 [40 CFR 122.26(b)(14)].

C. WATER QUALITY-BASED EFFLUENT LIMITATIONS

Technology-based effluent limitations were screened against state water quality numerical standard based limits by following guidance procedures established in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. Calculations, results, and documentation are given in Appendix B.

In accordance with LAC 33:IX.2707.D.1/40 CFR § 122.44(d)(1), the existing (or potential) discharge (s) was evaluated in accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001, to determine whether pollutants would be discharged "at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." Calculations, results, and documentation are given in Appendix B.

The following pollutants received water quality based effluent limits:

Hexachlorobenzene

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001. They are also listed in Part II of the permit.

**TMDL Waterbodies**

Outfall 002 and 009

The discharges from Outfall 002 including combined process effluents from Internal Outfalls 102, 202, 302, and 402 and firewater and river water from Outfall 009 are to Mississippi River, Segment No. 070301. Subsegment No. 070301 of the Mississippi River is not listed on the 2004 Integrated Report for any impairments. Therefore, no additional requirements were placed in the proposed permit.

According to information received on 8/24/00 from Leslie Lemon of the Department of Health and Hospitals, Office of Public Health, there have been no toxic exceedences of drinking water Maximum Contaminant Levels at this drinking water intake.

In the event that an unauthorized discharge into the Mississippi River or any other water of

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 20

the state used for potable water supply within the State of Louisiana; from a permitted or unpermitted, licensed or unlicensed treatment works, operating facility, wharf, onshore riverside site, transport vehicle, or vessel; could reasonably be expected to interfere with or significantly impact downstream potable or industrial water usage, the discharger shall notify the Department immediately, but in no case later than one (1) hour after learning of the discharge, by telephone or other rapid communication means, in accordance with the notification procedures in Part III, Section D of this permit. The discharger shall also notify the Lower Mississippi River Waterworks Warning Network immediately by telephone or other rapid communication means.

Outfalls 004, 005, 006, 007, and 008

The discharges from Outfalls 004, 005, 006, 007, and 008 includes combined utility and stormwater discharges to Bayou LaButte, 120201. Bayou LaButte is listed on the 2004 Integrated Report as being impaired with organic enrichment/low DO, pathogen indicators, nitrate/nitrite, phosphorus, and sulfates.

A TMDL is scheduled to be completed by March 31, 2007.

Organic Enrichment/ low DO

To assess potential receiving water impairments of organic enrichment/low DO in the combined utility and stormwater discharges, the oxygen demanding parameter, TOC, was reviewed. Outfalls 004, 005, 006, and 007 have a daily maximum TOC limitation of 50 mg/L. These limitations have been retained from the current permit and are consistent with LDEQ guidance for similar discharges.

Outfall 008 consists of car wash wastewater. The 300 mg/L daily maximum limitation for COD was retained.

Pathogen Indicators

Pathogen Indicator impairments are normally associated with the discharges of sanitary wastewater. Outfalls 004, 005, 006, 007, and 008 contains utility and stormwater discharges, and are not reasonably expected to cause further pathogen indicator impairments in this waterbody. Therefore, no additional requirements were placed in the proposed permit.

Nitrate/Nitrite and Phosphorus

The discharges from these outfalls including utility and stormwater are not reasonably expected to cause further nitrate/nitrite or phosphorus impairments to this waterbody. Therefore, no additional requirements were placed in the proposed permit.

Sulfates

To protect against the potential discharge of Sulfates into the receiving waterbody at levels that could cause or contribute to exceedance of Louisiana Water Quality Standards, effluent data submitted with the application were evaluated. Sulfates were found to be present in the effluent, but at levels below the numerical criteria of 250 mg/L listed in LAC 33:IX1113.C.2., therefore no limitations were assigned for sulfates at Outfalls 004, 005, 006, 007, or 008.

A reopen clause will be established in the permit to include more stringent limits based on final loading allocations in any completed and approved TMDL for these impairments.

Monitoring frequencies for water quality based limited parameters are established in

accordance with the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

**Site-Specific Consideration(s)**

None

D. **Biomonitoring Requirements**

It has been determined that there may be pollutants present in the effluent which may have the potential to cause toxic conditions in the receiving stream. The State of Louisiana has established a narrative criteria which states, "toxic substances shall not be present in quantities that alone or in combination will be toxic to plant or animal life." The Office of Environmental Services requires the use of the most recent EPA biomonitoring protocols.

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. The biomonitoring procedures stipulated as a condition of this permit for Outfall(s) 002 are as follows:

<u>TOXICITY TESTS</u>	<u>FREQUENCY</u>
Acute static renewal 48-hour definitive toxicity test using <u>Daphnia pulex</u>	1/year
Acute static renewal 48-hour definitive toxicity test using fathead minnow ( <u>Pimephales promelas</u> )	1/year

Toxicity tests shall be performed in accordance with protocols described in the latest revision of the "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms." The stipulated test species are appropriate to measure the toxicity of the effluent consistent with the requirements of the State water quality standards. The biomonitoring frequency has been established to reflect the likelihood of ambient toxicity and to provide data representative of the toxic potential of the facility's discharge in accordance with regulations promulgated at LAC 33:IX.2715/40 CFR Part 122.48.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity shall be documented in a full report according to the test method publication mentioned in the previous paragraph. The permittee shall submit a copy of the first full report to the Office of Environmental Compliance. The full report and subsequent reports are to be retained for three (3) years following the provisions of Part III.C.3 of this permit. The permit requires the submission of certain toxicity testing information as an attachment to the Discharge Monitoring Report.

This permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.3105/40 CFR 124.5. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

Dilution Series

The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional effluent concentrations shall be 0.7%, 0.5%, 0.4%, 0.3%, and 0.2%. The low-flow effluent concentration (critical dilution) is defined as 0.2% effluent.

**E. MONITORING FREQUENCIES**

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity [LAC 33:IX.2715/40 CFR 122.48(b)] and to assure compliance with permit limitations [LAC 33:IX.2707.1./40 CFR 122.44(I)]. The following section(s) explain the rationale for the monitoring frequencies stated in the draft permit.

1. Outfall 002 - the continuous discharge of the combined effluents from Internal Outfalls 102, 202, 302, and 402. (Note: Outfall 402 becomes Utility Water, which is used throughout the facility and wastewater derived from Utility Water may be discharged through any outfall, except Outfalls 008 and 009).

Flow , pH, and Temperature shall be monitored continuously. The following pollutants are to be monitored 1 time/week.

Parameter(s):  
Oil & Grease

The monitoring frequency for Hexachlorobenzene, is set at 1/year since it is a pollutant not expected to be on site.

2. Internal Outfall 102 -the batch internal discharge from combined inorganic treatment (pH control) system outfall to final Outfall 002. Wastewater sources through this discharge outfall include: C/C process, diaphragm cell renewal, operation and maintenance cleaning waters, utility water, turnaround washwaters, tank truck/railcar loading sump waters, miscellaneous vehicle washwaters, hydro test waters from piping and equipment, tank washwaters, some lab sink and floor drain wastewater, potable water, firewater, boiler blowdowns, steam condensates, cooling tower blowdowns, and both process and non-process area stormwater, miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities), previously monitored discharges from Internal Outfall 402, and as an alternate routing wastewaters from the regeneration of demineralizer resins, R.O. reject water, and water well flushes.

Flow shall be monitored continuously.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 23

A monitoring frequency of 3/week for the following listed toxic pollutants is considered adequate for the protection of the receiving water and its designated uses as stated in Section VI.7.

Parameter(s):

COD  
TRC

The following pollutants are to be monitored 1 times/week.

Parameter(s):

TSS

The following pollutants are to be monitored 2 times/month.

Parameter(s):

Total Copper

The following pollutants are to be monitored 1 time/month.

Parameter(s):

Total Lead  
Total Nickel

3. Internal Outfall 202 - the continuous discharge of combined wastewaters from the biotreatment system. Wastewater sources to the biotreatment system include: VCM process, VCM process stripper waters, VCM check basin waters, VCM process area stormwater, VCM process area drainage strippers, storage tank vent scrubber waters, shipping area sumps and scrubber waters, sanitary sumps from all facility areas, PVC process, PVC process stripper waters, PVC process area stormwater, phenol/acetone process, phenol/acetone process wastewater strippers, phenol/acetone gravity separator waters, phenol/acetone wastewater decanter waters, phenol/acetone railcar spill containment waters, marine loading vapor recovery waters, tank truck/railcar loading sump waters, stormwater contacting the Old West Ditch, former methanol process area stormwater, boiler blowdown, firewater, some laboratory sink and floor drain wastewater, steam condensate, utility water, operation and maintenance cleaning waters, recovered groundwater from monitoring/recovery wells, turnaround wash waters, hydrotest waters from piping and equipment, tank washwaters, East Ditch system optionally routed waters, belt filter press filtrate, water from the sludge digestion tank area, previously monitored discharges from Internal Outfall 402, and miscellaneous wastewaters (includes any source of wastewater not otherwise listed originating from within a unit, resulting from process activities).

Flow and Temperature shall be monitored continuously. The following pollutants are to be monitored 3 times/week.

Parameter(s):

TSS  
Phenol

The following pollutants are to be monitored 2 times/week.

Parameter(s):

BOD<sub>s</sub>

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 24

Those toxic pollutants being discharged at levels less than the draft permit mass limits, but still being discharged at significant levels are proposed to be monitored 1/week.

Parameter(s):

TOC  
Total Zinc  
Carbon Tetrachloride  
Chloroethane  
Chloroform  
1,1-Dichloroethane  
1,2-Dichloroethane  
1,1-Dichloroethylene  
1,2-trans-Dichloroethylene  
1,2-Dichloropropane  
1,3-Dichloropropylene  
Methyl Chloride  
Methylene Chloride  
Tetrachloroethylene  
1,1,1-Trichloroethane  
1,1,2-Trichloroethane  
Trichloroethylene  
Vinyl Chloride

The following parameters will be monitored 1/month.

Parameter(s):

TRC  
Total Copper  
Total Nickel

Toxic pollutants not expected to be on-site are proposed to be monitored once per year.

4. Internal Outfall 302 - the continuous internal discharge of combined cooling tower blowdown, treated process area stormwater, and non-process area stormwater runoff. Sources of this discharge outfall include: R.O. reject water, cooling tower blowdown from the methanol area, Phenol/Acetone, C/C, PVC, VCM, and air separation units; treated process area stormwater from air separation unit; stormwater retention pond water; former VCM emergency pond water; Old West Ditch area stormwater; neutralized demineralizer regeneration waters from the Utilities Unit; stormwater from secondary containment areas for tanks; stormwater from adjacent areas to the PVC resin off loading area; stormwater from former areas associated with industrial activity and significant materials areas; COGEN Blowdown; utility water and process water from the COGEN Unit; operation and maintenance cleaning waters; utility water; hydrotest waters from piping and equipment; tank washwaters; potable water; firewater; steam condensates; water well flushes; stormwater from the closed Chlorate Unit; and previously monitored discharges from Internal Outfall 402.

Flow and pH shall be monitored continuously. The following pollutants are to be monitored 1 time/day.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 25

Parameter(s):  
Free Available Chlorine

The following pollutants are to be monitored 3 times/week.

Parameter(s):  
COD  
Chloroform  
1,2-Dichloroethane  
Phenol  
Vinyl Chloride

5. Internal Outfall 402 - the continuous internal discharge of the plant firewater, utility water system, and East Ditch of combined wastewaters from the PVC treatment system including process wastewaters and process and non-process area stormwater from the PVC unit, stormwater from the PVC resin off loading area, and potable water that has come into contact with process areas (Note: Outfall 402 becomes Utility Water, which is used throughout the facility and wastewater derived from Utility Water may be discharged through any outfall).

Flow shall be monitored continuously. The following pollutants are to be monitored 1 time/day.

Parameter(s):  
TOC

The following pollutants are to be monitored 3 times/week.

Parameter(s):  
TSS  
 $BOD_5$

The following pollutants are to be monitored 1 time/week.

Parameter(s):  
Vinyl Chloride

Toxic pollutants not expected to be on-site are proposed to be monitored once per year.

6. Outfall(s) 004, 005, 006, and 007 - Stormwater discharges

\* Outfall 004 - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, railcar tracks, the adjacent Shintech property. Other sources of this discharge include rinse waters from facility truck washing area, potable water, firewater, and previously monitored discharges from Internal Outfall 402.

\* Outfall 005 -the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, concrete recycling area, and railcar tracks. Other sources of this discharge include rinse waters from facility truck washing areas, potable water, firewater, and previously monitored discharges from Internal Outfall 402.

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 26

\* Outfall 006 - the intermittent discharge of stormwater from a portion of the landfarm area. Sources of this discharge include stormwater from the landfarm area with applied lime and brine precipitate from hardness removal, the contractor parking lot and railcar tracks, non-process area stormwater from the Air Separation Unit, undeveloped areas on the west side of the facility, and from the adjacent Air Liquide facility. Other sources of this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.

Stormwater discharges, being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

The following parameters will be monitored 1/quarter.

Parameter(s):

Flow  
TOC  
Oil & Grease  
TSS  
pH  
Total Chromium  
Total Copper  
Total Nickel  
Total Zinc

The following parameters will be monitored 1/6 months.

Parameter(s):

Chloroform  
1,2-Dichloroethane  
Phenol  
Vinyl Chloride

\* Outfall 007 - the intermittent discharge of stormwater from the north and west portions of the facility. Sources of this discharge include stormwater from the north side of the facility (near the marine loading pipe rack, administrative parking lot, main facility access road, environmental/industrial relations parking lot, waste storage bins and drums area, and inorganic treatment system area), stormwater from the west side of the facility (near PVC parking lot, cemetery, C/C personnel parking lot, finish vinyl product testing area), stormwater impacted by grass/plant cutting from Parish roadside ditch maintenance (which can elevate TSS), and non-process area stormwater from the Air Separation Unit. Other sources of this discharge includes potable water, firewater, and previously monitored discharges from Internal Outfall 402.

Stormwater discharges, being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

All parameters - 1/quarter, when discharging

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 27

7. Outfall 008 - Car wash discharges.

Utility discharges being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

All parameters - 1/quarter, when discharging

8. Outfall 009 - Fire water and river water discharges from the dock area

Fire protection system discharges being discharged to discrete outfalls shall receive monitoring frequencies according to the following schedule:

All parameters - 1/discharge event

**X. Compliance History/DMR Review:**

A Compliance History/DMR review was done covering the period of January 2002 through January 2006. The following excursions were reported during that period:

<u>DMR Date</u>	<u>Parameter</u>	<u>Outfall</u>	<u>Reported Value</u>	<u>Permit Limits</u>
09/30/02	TRC	102	456.8 lbs/day, daily max	34.4 lbs/day, daily max
11/30/02	TSS	102	4551 lbs/day, daily max	2878 lbs/day, daily max
07/31/03	Phenol	202	2.07 lbs/day, daily max	0.24 lbs/day, daily max

Inspection conducted on March 25, 2004 found the following: Facility Site Review-Spillage of pvc resin powder in the pvc production area has been reduced. Considerable pvc resin powder was observed on limestone aggregate located adjacent to the rail and truck loading areas. A nearby stormwater drainage ditch flows to Outfall 007. A boom has been positioned in the ditch downstream of the rail/truck loading areas. The boom site is checked every A.M. for the presence of pvc resin. This inspector did not observe pvc resin in the ditch on either side of the boom. Effluent/Receiving Waters-Evaluated visually and by DMR review. Laboratory-Facility lab does not run lab control samples - also noted in previous inspection of April 28-29,2003.

A Multi-Media inspection was conducted by EPA, Region VI on January 10, 2005. Areas of concern include lack of Outfall 302 action levels, pH monitoring, and action plan requirements.

**XI. "IT" Questions - Applicant's Responses**

Please refer to Appendix D of the permit renewal application submitted by Georgia Gulf Chemicals and Vinyls, LLC on January 30, 2004, for responses to IT Questions.

**XII. Endangered Species:**

The receiving waterbody, Subsegment 070301 of the Mississippi River Basin, has been identified by the U.S. Fish and Wildlife Service (FWS) as habitat for the Pallid Sturgeon and West Indian Manatee, which are listed as an endangered species. Subsegment 120201 of the Terrebonne Basin is not listed for endangered species. LDEQ has not submitted this draft permit to the FWS for review in accordance with a letter dated 10/21/05 from Watson (FWS) to Gautreaux (LDEQ). As set forth in the Memorandum of Understanding between the LDEQ and the FWS, and based on information provided by the FWS, LDEQ has determined that the issuance of the LPDES permit is not likely to have an adverse effect upon the Pallid Sturgeon and West Indian Manatee. Effluent limitations are

Fact Sheet and Rationale for  
Georgia Gulf Chemicals & Vinyls, LLC, Georgia Gulf - Plaquemine  
LA0007129, AI No. 2455  
Page 28

established in the permit to ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat. The more stringent of technology and water quality based limits (as applicable) have been applied to ensure maximum protection of the receiving water.

**XIII. Historic Sites:**

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

**XIV. Tentative Determination:**

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

**XV. Variances:**

No requests for variances have been received by this Office.

**XVI. Public Notices:**

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the fact sheet. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

## **Appendix A**

Revised 03/27/02

LA0007129, A12455

Appendix A-1

Page 1

01/31/2006 Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

(\*1)

## TABLE 1

Permittee:	Georgia Gulf Chemicals & Vinyls, LLC	
Permit Number:	LA0007129, A12455	
Appendix	Appendix A-1	(*3)
[] Flow Basis 1=proc, 0=all	0	Frac =0, []=1
Concentration flow, (MGD)	---	Miscellaneous WW
GL vs Old, 0=n, 1=y, 2=GL+Old	1	Misc. WW, mg/L
Outfall number	Out. 102	Utility WW
Deepwell fract., 40 CFR 122.50		Utility WW, mg/L
		Sanitary, mg/L
(*2)		
OCPSF Subpart I=1, J=2		(*4)
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm
		Metal+CN Flows: MGD gpm
		Total Chromium
		Total Copper
		Total Lead
		Total Nickel
		Total Zinc
		Total Cyanide
		(*5)
		OCPSF Guideline Subpart: Prod. 1000 lbs Fraction
		per day of Total 1st Input Page 1-y, 0=n
		B, Rayon Fibers --- 2nd Input Page 0
		C, Other Fibers --- OCPSF 0
TOTAL PROCESS FLOW:	---	D, Thermoplastic Resins --- SS Metals 0
		E, Thermosetting Resins --- Inorganic 1
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm
		F, Commodity Organics --- Fertilizer 0
SANITARY WW:		G, Bulk Organics --- Pesticides 0
		H, Specialty Organics --- COD/TOC/O&G Tbl 0
		Total: --- BOD/TSS Tbl 1
		Table Designation Sequence
MISCELLANEOUS:	MGD	gpm
		(*6)
		COD & TOC Ratios: Average Maximum
		COD/BOD5 ratio
		TOC/BOD5 ratio
		COD, TOC, O&G (): Average Maximum
		COD, mg/L --- COD,Avg (lbs/day) 0
		TOC, mg/L --- COD,Max (lbs/day) 0
TOTAL MISCELLANEOUS FLOWS:	---	---
		O&G, mg/L --- TOC,Avg (lbs/day) 0
		TOC,Max (lbs/day) 0
UTILITY WASTEWATER:	MGD	gpm
		(*7)
		INORGANIC GUIDELINES:
		New Source 1=y 0=n 0 Prod.
		0 Fraction=0, []=1 0 1000 lbs
		40 CFR 415 per day Flow Flow OCPSF Fraction
		40 CFR 415.63 Mercury 1 1
		40 CFR 415.63 Diaphragm 2696 1 1
TOTAL UTILITY WW FLOWS:	---	---
TOTAL OCPSF+BPJ FLOW:	---	---
		OCPSF+Inorganic ---

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC

Out. 102

#### Conventional pollutant loading calculations, BOD<sub>5</sub> and TSS

TABLE 2

Calculation of BOD<sub>5</sub>, and TSS limits:

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
OCPSF GL 40 CFR 414	BOD5	BOD5	TSS	TSS	Prod.	Prod.	Process	Conv.	BOD5	BOD5	TSS	TSS
Subpart:	Avg	Max	Avg	Max	1000 lbs	Fraction	Flow	Factor	Avg	Max	Avg	Max
	mg/L	mg/L	mg/L	mg/L	per day	of Total	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
B, Rayon Fibers							---	8.34	---	---	---	---
C, Other Fibers							---	8.34	---	---	---	---
D, Thermoplastic Resins							---	8.34	---	---	---	---
E, Thermosetting Resins							---	8.34	---	---	---	---
F, Commodity Organics							---	8.34	---	---	---	---
G, Bulk Organics							---	8.34	---	---	---	---
H, Specialty Organics							---	8.34	---	---	---	---
Total/Weighted[]	---	---	---	---			---	8.34	---	---	---	---
BPJ Sources/Guidelines	BOD5	BOD5	TSS	TSS			Conv.	BOD5	BOD5	TSS	TSS	
	Avg	Max	Avg	Max			Flow	Factor	Avg	Max	Avg	Max
BPJ Sources:	mg/L	mg/L	mg/L	mg/L			(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Sanitary WW:							---	8.34	---	---	---	---
Miscellaneous:							---	8.34	---	---	---	---
Utility Wastewater:							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
							---	8.34	---	---	---	---
BPJ Source Total:							---		---	---	---	---
Other Guidelines:	BOD5	BOD5	TSS	TSS	Prod.	Flow to	Conv.	BOD5	BOD5	TSS	TSS	
Inorganic	Avg	Max	Avg	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
40 CFR 415	mg/L	mg/L	mg/L	mg/L	1000 lbs/1000	1000 lbs/1000 per day	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Chlor-Alkali Diaph		0.51	1.1	2696	---	---	8.34	---	---	1374.96	2965.6	
				---	---	---	8.34	---	---	---	---	
				---	---	---	8.34	---	---	---	---	
				---	---	---	8.34	---	---	---	---	
				---	---	---	8.34	---	---	---	---	
BOD5	BOD5	TSS	TSS	Prod.	Flow to	Conv.	BOD5	BOD5	TSS	TSS		
Avg	Max	Avg	Max	Max	1000 lbs	Tmt. Plt.	Flow	Factor	Avg	Max	Avg	Max
				1000 lbs/1000	1000 lbs/1000	1000 lbs/1000 per day	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day
Other Guideline Total (lbs/day)							---		---	1374.96	2965.6	
BOD5/TSS Grand Total (lbs/day)							---		---	1374.96	2965.6	

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC

Out. 102

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 414 OCPSF, 40 CFR 415, and 40 CFR 455 as applicable

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC  
Out. 102

Toxic pollutant loading calculations, heavy metals, TRC, and Cyanide

TABLE 3

40 CFR 415 and 40 CFR 455 as applicable

(*1) Subcategory	(*2) TRC Avg	(*3) TRC Max	(*4) Mercury Avg	(*5) Mercury Max	(*6) Prod. Max1000	(*7) lbs Tmt. lbs/day	(*8) Flow to Flow (MGD)	(*9) Mercury Flow (MGD)	(*10) TRC Avg lbs/day	(*11) TRC Max lbs/day	(*12) Mercury Avg lbs/day	(*13) Mercury Max lbs/day
<b>Inorganic Guidelines:</b> lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day Fraction												
Chlor-Alkali, Diaph.	0.0079	0.013			2696	---		21.2984	35.048	---	---	---
						---		---	---	---	---	---
						---		---	---	---	---	---
						---		---	---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
									---	---	---	---
									---	---	---	---
									---	---	---	---
Total						---		21.2984	35.048	---	---	---
<b>Inorganic Guidelines:</b> lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day Fraction												
Chlor-Alkali, Diaph.	Cyanide A Avg	Cyanide A Max	Antimony Avg	Antimony Max	Prod. Max1000	lbs Tmt. lbs/day	Flow to Flow (MGD)	Cyanide A Flow (MGD)	Cyanide A Avg lbs/day	Cyanide A Max lbs/day	Antimony Avg lbs/day	Antimony Max lbs/day
									---	---	---	---
									---	---	---	---
									---	---	---	---
Other Sources, BPJ (Flow Based)	Avg mg/L	Max mg/L	Avg mg/L	Max mg/L					Avg lbs/day	Max lbs/day	Avg lbs/day	Max lbs/day
									---	---	---	---
									---	---	---	---
									---	---	---	---
Total						---		---	---	---	---	---

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 102

TABLE 4

## Calculation Summary of Conventional and Non-Conventional Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old	Anti-BackOut.	102 Out.	102 Out.	102 Out.	102 Out.
	Avg.	Max	Flow	Avg	Max	Avg	Max	Max0=no scr.	Avg	Max	Avg	Avg	Max
<b>CONVENTIONAL</b>													
BOD5				---	---			---	---	---	---	---	---
TSS				1374.96	2965.6			---	1375	2966	---	---	---
Oil and Grease				---	---			---	---	---	---	---	---
<b>NON-CONVENTIONAL</b>													
COD				---	---			---	---	---	---	---	---
TOC				---	---			---	---	---	---	---	---
TRC				21.2984	35.048			---	21.3	35.0	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---	---

## Calculation Summary of Metal and Cyanide Toxic Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old	Anti-BackOut.	102 Out.	102 Out.	102 Out.	102 Out.
	Avg.	Max	Flow	Avg	Max	Avg	Max	Max0=no scr.	Avg	Max	Avg	Avg	Max
<b>METALS AND CYANIDE</b>													
Total Chromium													
Total Copper				13.2104	32.352			---	13.21	32.35	---	---	---
Total Lead				6.4704	15.9064			---	6.47	15.91	---	---	---
Total Nickel				9.9752	26.1512			---	9.98	26.15	---	---	---
Total Zinc				---	---			---	---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---	---
Antimony				---	---			---	---	---	---	---	---
	---	---		---	---			---	---	---	---	---	---
	---	---		---	---			---	---	---	---	---	---

Revised 03/27/02

LA0007129, A12455

Appendix A-2

Page 1

01/31/2006 Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

(\*1)

TABLE 1

Permittee:	Georgia Gulf Chemicals & Vinyls, LLC		
Permit Number:	LA0007129, A12455		
Appendix	Appendix A-2		(*3)
[] Flow Basis 1=proc, 0=all	0		Fract =0, []=1
Concentration flow, (MGD)	---		Miscellaneous WW
GL vs Old, 0=n, 1=y, 2=GL+Old	1		Misc. WW, mg/L
Outfall number	Out. 202		Utility WW
Deepwell fract., 40 CFR 122.50			Utility WW, mg/L
			Sanitary, mg/L
(*2)			Fraction of OCPSF Conc. or BPJ []
OCPSF Subpart I=1, J=2	1		1 BOD,avg BOD,max TSS,avg TSS,max
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm	
Phenol Unit Wastewater	0.288		Metal+CN Flows: MGD gpm
VCM Unit Wastewater	0.799		Total Chromium
PVC Unit Wastewater	0.156		Total Copper --- (*8)
Atmospheric Losses [*1]	-0.19888		Total Lead
			OCPSF Alternate Flows: MGD
			Total Nickel --- Conventionals:
			Total Zinc --- Organic Toxics: ---
			Total Cyanide Process Waste Water
			Process Stormwater
			(*5) (*9)
TOTAL PROCESS FLOW:	1.04412	---	OCPSF Guideline Prod. Prod. Page and Table Numbering
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm	Subpart: 1000 lbs Fraction 1=y, 0=n
Sanitary WW	0.355		per day of Total 1st Input Page 1
Atmospheric Losses [*1]	-0.0568		B, Rayon Fibers --- 2nd Input Page 0
Net Sanitary WW	0.2982		C, Other Fibers --- OCPSF 1
			D, Thermoplastic Resins 0.116 SS Metals 0
			E, Thermosetting Resins --- Inorganic 0
			F, Commodity Organics 0.875 Fertilizer 0
			G, Bulk Organics 0.009 Pesticides 0
			H, Specialty Organics --- COD/TOC/O&G Tbl 1
			Total: --- 1 BOD/TSS Tbl 1
			Table Designation Sequence
			Pesticides &OCPSF 0
			PestMetal 1=y,0=n 0
MISCELLANEOUS:	MGD	gpm	(*6)
Cogen Misc.	0.002		COD & TOC Ratios: Average Maximum
Atmospheric Losses [*1]	-0.00032		COD/BOD5 ratio
TOTAL MISCELLANEOUS FLOWS:	0.00168	---	TOC/BOD5 ratio 7.93617 9.489109 Flow (*10)
UTILITY WASTEWATER:	MGD	gpm	COD, TOC, O&G []: Average Maximum MGD COD and TOC limits, precalc
			COD, mg/L --- COD,Avg (lbs/day) 0
			TOC, mg/L --- COD,Max (lbs/day) 0
			O&G, mg/L --- TOC,Avg (lbs/day) 0
			TOC,Max (lbs/day) 0
			(*7)
			INORGANIC GUIDELINES:
			New Source 1=y 0=n 0 Prod. OCPSF BOD5
			O Fraction=0, []=1 0 1000 lbs Flow Flow OCPSF Fraction
			40 CFR 415 per day MGD gpm Avg Max
			40 CFR 415.63 Mercury 1 1
			40 CFR 415.63 Diaphragm 1 1
TOTAL UTILITY WW FLOWS:	---	---	[*1] Atmospheric losses of 0.25 MGD were divided on a flow proportion basis between process, utility, and sanitary wastewaters.
TOTAL OCPSF+BPJ FLOW:	1.344	---	OCPSF+Inorganic 1.344

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC

Out. 202

## Conventional pollutant loading calculations, BOD<sub>5</sub> and TSS

TABLE 2

#### **Calculation of BOD<sub>5</sub>, and TSS limits:**

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC  
Out. 202

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg	COD Max	TOC Avg	TOC Max1000 lbs	Prod. Tmt.	Flow to Plt.	Conv. Factor	COD Avg	COD Max	TOC Avg	TOC Max	
	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	Max1000 lbs	Tmt.	Fraction		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
Guideline Total	---	---	---	---	---	---		---	---	---	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg	COD Max	TOC Avg	TOC Max	COD Flow	TOC Flow	Conv. Factor	COD Avg	COD Max	TOC Avg	TOC Max	
	mg/L	mg/L	mg/L	mg/L	(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
BPJ Source/GL Total	---	---	---	---	---	---	8.34	---	---	---	---	---
COD or TOC/BOD Ratio, COD/BODS Source: Ratio	COD Avg	COD Max	TOC Avg	TOC Max	BODS limit	BODS limit		COD Avg	COD Max	TOC Avg	TOC Max	
					Avg	Max		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
All sources	---	---	7.93617	9.489109	280.4315	718.8603		---	---	2225.552	6821.344	
Ratio Total	---	---	---	---	---	---	---	---	---	2225.552	6821.344	
COD/TOC limits, precalc.	---	---	---	---	---	---	---	---	---	---	---	---
COD/TOC Total (lbs/day)	---	---	---	---	---	---	---	---	---	2225.552	6821.344	
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max	O&G Avg	O&G Max	Prod. Max1000 lbs	Flow to Tmt.	Conv. Factor	O&G Avg	O&G Max	O&G Avg	O&G Max	
	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	lbs/1000 lbs/1000 lbs/1000 lbs/1000 per day	Max1000 lbs	Tmt.	Fraction		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max	O&G Avg	O&G Max	O&G Flow	Conv. Flow	Conv. Factor	O&G Avg	O&G Max	O&G Avg	O&G Max	
	mg/L	mg/L	mg/L	mg/L	(MGD)	(MGD)		lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
O&G Total (lbs/day)	---	---	---	---	---	---	8.34	---	---	---	---	---
---	---	---	---	---	---	---	8.34	---	---	---	---	---

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 202

TABLE 4

## Calculation Summary of Conventional and Non-Conventional Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old Anti-BackOut.	202 Out.				
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Max	mg/L	mg/L
<b>CONVENTIONAL</b>													
BOD5				280.4315	718.8603			---	280	719	---	---	---
TSS				432.1855	1336.558			---	432	1337	---	---	---
Oil and Grease				---	---			---	---	---	---	---	---
<b>NON-CONVENTIONAL</b>													
COD				---	---			---	---	---	---	---	---
TOC				2225.552	6821.344			---	2226	6821	---	---	---
TRC				---	---	20	33	1	20.0	33.0	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---	---

## Calculation Summary of Metal and Cyanide Toxic Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old Anti-BackOut.	202 Out.				
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Max	mg/L	mg/L
<b>METALS AND CYANIDE</b>													
Total Chromium				---	---			---	---	---	---	---	---
Total Copper [*2]				---	---	2.64	6.15	1	2.64	6.15	---	---	---
Total Lead				---	---			---	---	---	---	---	---
Total Nickel [*2]				---	---	3.07	7.24	1	3.07	7.24	---	---	---
Total Zinc [*2]				---	---	1.91	4.75	1	1.91	4.75	---	---	---
Total Mercury				---	---			---	---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---	---
				---	---			---	---	---	---	---	---
				---	---			---	---	---	---	---	---

[\*2] Parameters associated with the Methanol Process incorporated into the 2/1/99 permit as metal bearing streams associated with Methanol Manufacturing. According to Georgia Gulf, the Methanol Process has been shut down, however, effluent analysis submitted with the permit renewal application shows the presence of these pollutants in the existing discharge. Therefore, these pollutant limitations are being retained from the LPDES permit, effective on 2/1/99.

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 202

## Calculation of Toxic Limits, OCPSF Subpart I

TABLE 5

OCPSF Parameter Subpart I	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech	Old Tech	Old G/L-BPJ	Out. 202				
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Max	mg/L	mg/L
2=Old+GL													
<b>VOLATILE COMPOUNDS</b>													
Acrylonitrile	0.096	0.242	1.04412	0.835964	2.107327			---	0.84	2.11	---	---	---
Benzene	0.037	0.136	1.04412	0.322195	1.184283			---	0.32	1.18	---	---	---
Carbon Tetrachloride	0.018	0.038	1.04412	0.156743	0.330903			---	0.16	0.33	---	---	---
Chlorobenzene	0.015	0.028	1.04412	0.130619	0.243823			---	0.13	0.24	---	---	---
Chloroethane	0.104	0.268	1.04412	0.905628	2.333733			---	0.91	2.33	---	---	---
Chloroform	0.021	0.046	1.04412	0.182867	0.400566			---	0.18	0.40	---	---	---
1,1-Dichloroethane	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
1,2-Dichloroethane	0.068	0.211	1.04412	0.592141	1.83738			---	0.59	1.84	---	---	---
1,1-Dichloroethylene	0.016	0.025	1.04412	0.139327	0.217699			---	0.14	0.22	---	---	---
1,2-trans-Dichloro- ethylene	0.021	0.054	1.04412	0.182867	0.47023			---	0.18	0.47	---	---	---
1,2-Dichloropropane	0.153	0.23	1.04412	1.332318	2.002831			---	1.33	2.00	---	---	---
1,3-Dichloropropylene	0.029	0.044	1.04412	0.252531	0.38315			---	0.25	0.38	---	---	---
Ethylbenzene	0.032	0.108	1.04412	0.278655	0.94046			---	0.28	0.94	---	---	---
Methyl Chloride	0.086	0.19	1.04412	0.748885	1.654513			---	0.75	1.65	---	---	---
Methylene Chloride	0.04	0.089	1.04412	0.348318	0.775009			---	0.35	0.78	---	---	---
Tetrachloroethylene	0.022	0.056	1.04412	0.191575	0.487646			---	0.19	0.49	---	---	---
Toluene	0.026	0.08	1.04412	0.226407	0.696637			---	0.23	0.70	---	---	---
1,1,1-Trichloroethane	0.021	0.054	1.04412	0.182867	0.47023			---	0.18	0.47	---	---	---
1,1,2-Trichloroethane	0.021	0.054	1.04412	0.182867	0.47023			---	0.18	0.47	---	---	---
Trichloroethylene	0.021	0.054	1.04412	0.182867	0.47023			---	0.18	0.47	---	---	---
Vinyl Chloride	0.104	0.268	1.04412	0.905628	2.333733			---	0.91	2.33	---	---	---
<b>ACID COMPOUNDS</b>													
2-Chlorophenol	0.031	0.098	1.04412	0.269947	0.85338			---	0.27	0.85	---	---	---
2,4-Dichlorophenol	0.039	0.112	1.04412	0.33961	0.975292			---	0.34	0.98	---	---	---
2,4-Dimethylphenol	0.018	0.036	1.04412	0.156743	0.313487			---	0.16	0.31	---	---	---
4,6-Dinitro-o-cresol	0.078	0.277	1.04412	0.679221	2.412105			---	0.68	2.41	---	---	---
2,4-Dinitrophenol	0.071	0.123	1.04412	0.618265	1.071079			---	0.62	1.07	---	---	---
2-Nitrophenol	0.041	0.069	1.04412	0.357026	0.600849			---	0.36	0.60	---	---	---
4-Nitrophenol	0.072	0.124	1.04412	0.626973	1.079787			---	0.63	1.08	---	---	---
Phenol	0.015	0.026	1.04412	0.130619	0.226407			---	0.13	0.23	---	---	---

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 202

## Calculation of Toxic Limits, OCPSF Subpart I

TABLE 5

OCPSF Parameter Subpart I	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L Val	G/L Val	Process	G/L Val	G/L Val	Tech	Old	Tech	Old	Anti-BackOut.	202 Out.	202 Out.	202 Out.
	Avg.	Max	Flow	Avg	Max	Avg	Max	Max0=no scr.	Avg	Max	Avg	Max	Avg
mg/L mg/L (MGD) lbs/day lbs/day lbs/day lbs/day lbs/day=OldvsGL lbs/day lbs/day lbs/day mg/L mg/L													
2=Old+GL													
<b>BASE/NEUTRAL COMPOUNDS</b>													
Acenaphthene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Acenaphthylene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Anthracene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Benz(a)anthracene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Benz(a)pyrene	0.023	0.061	1.04412	0.200283	0.531186			---	0.20	0.53	---	---	---
3,4-Benzofluoranthene	0.023	0.061	1.04412	0.200283	0.531186			---	0.20	0.53	---	---	---
Benzo(k)fluoranthene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Bis(2-ethylhexyl)-phthalate	0.103	0.279	1.04412	0.89692	2.429521			---	0.90	2.43	---	---	---
Chrysene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
1,2-Dichlorobenzene	0.077	0.163	1.04412	0.670513	1.419398			---	0.67	1.42	---	---	---
1,3-Dichlorobenzene	0.031	0.044	1.04412	0.269947	0.38315			---	0.27	0.38	---	---	---
1,4-Dichlorobenzene	0.015	0.028	1.04412	0.130619	0.243823			---	0.13	0.24	---	---	---
Diethyl phthalate	0.081	0.203	1.04412	0.705345	1.767716			---	0.71	1.77	---	---	---
Dimethyl phthalate	0.019	0.047	1.04412	0.165451	0.409274			---	0.17	0.41	---	---	---
Di-n-butyl phthalate	0.027	0.057	1.04412	0.235115	0.496354			---	0.24	0.50	---	---	---
2,4-Dinitrotoluene	0.113	0.285	1.04412	0.984	2.481769			---	0.98	2.48	---	---	---
2,6-Dinitrotoluene	0.255	0.641	1.04412	2.22053	5.581803			---	2.22	5.58	---	---	---
Fluoranthene	0.025	0.068	1.04412	0.217699	0.592141			---	0.22	0.59	---	---	---
Fluorene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Hexachlorobenzene	0.015	0.028	1.04412	0.130619	0.243823			---	0.13	0.24	---	---	---
Hexachlorobutadiene	0.02	0.049	1.04412	0.174159	0.42669			---	0.17	0.43	---	---	---
Hexachloroethane	0.021	0.054	1.04412	0.182867	0.47023			---	0.18	0.47	---	---	---
Naphthalene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Nitrobenzene	0.027	0.068	1.04412	0.235115	0.592141			---	0.24	0.59	---	---	---
Phenanthrene	0.022	0.059	1.04412	0.191575	0.51377			---	0.19	0.51	---	---	---
Pyrene	0.025	0.067	1.04412	0.217699	0.583433			---	0.22	0.58	---	---	---
1,2,4-Trichlorobenzene	0.068	0.14	1.04412	0.592141	1.219115			---	0.59	1.22	---	---	---

Revised 03/27/02

LA0007129, AI2455

## Appendix A-3

Page 1

01/31/2006 Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

(\*1)

TABLE 1

Permittee:	Georgia Gulf Chemicals & Vinyls, LLC		
Permit Number:	LA0007129, AI2455		
Appendix	Appendix A-3	(*3)	Fraction of OCPSF Conc. or BPJ []
[] Flow Basis 1=proc, 0=all	0	Fract =0, {}=1	0 BOD,avg BOD,max TSS,avg TSS,max
Concentration flow, (MGD)	---	Miscellaneous WW	0.5 0.5 0.5 0.5
GL vs Old, 0=n, 1=y, 2=GL+Old	1	Misc. WW, mg/L	5 10 10 20
Outfall number	Out. 402	Utility WW	0.25 0.25 0.25 0.25
Deepwell fract., 40 CFR 122.50		Utility WW, mg/L	5 10 10 20
		Sanitary, mg/L	30 45 30 45
			Conversion Factors:
(*2)		(*4)	Conv mg/L-->lbs/da 8.34
OCPSF Subpart I=1, J=2	2	Metal+CN Flows:	Conv ug/L-->mg/L 0.0001
OCPSF PROCESS FLOW CALCULATION:	MGD	gpm	Conv gpm-->MGD: 0.00144
PVC Process Area Reaction Water	1.7	Total Chromium	
		Total Copper	(*8)
		Total Lead	OCPSF Alternate Flows: MGD
		Total Nickel	Conventional: ---
		Total Zinc	Organic Toxics: ---
		Total Cyanide	Process Waste Water
			Process Stormwater
		(*5)	(*9)
		OCPSF Guideline	Prod. Prod. Page and Table Numbering
		Subpart:	1000 lbs Fraction 1=y, 0=n
			per day of Total 1st Input Page 1
		B, Rayon Fibers	--- 2nd Input Page 0
		C, Other Fibers	--- OCPSF 1
TOTAL PROCESS FLOW:	1.7	---	D, Thermoplastic Resins 1 1 SS Metals 0
			E, Thermosetting Resins --- Inorganic 0
BOD5/TSS BPJ ALLOCATION FLOWS:	MGD	gpm	F, Commodity Organics --- Fertilizer 0
			G, Bulk Organics --- Pesticides 0
SANITARY WW:			H, Specialty Organics --- COD/TOC/O&G Tbl 1
			Total: 1 1 BOD/TSS Tbl 1
			Table Designation Sequence
		(*6)	Pesticides &OCPSF 0
		COD & TOC Ratios: Average Maximum	PestMetal 1=y, 0=n 0
MISCELLANEOUS:	MGD	gpm	COD/BOD5 ratio
			TOC/BOD5 ratio 7.93617 9.489109 Flow (*10)
			COD, TOC, O&G []: Average Maximum MGD COD and TOC limits, precalc
			COD, mg/L --- COD,Avg (lbs/day) 0
			TOC, mg/L --- COD,Max (lbs/day) 0
TOTAL MISCELLANEOUS FLOWS:	---	---	O&G, mg/L --- TOC,Avg (lbs/day) 0
			TOC,Max (lbs/day) 0
UTILITY WASTEWATER:	MGD	gpm	(*7)
			INORGANIC GUIDELINES:
			New Source 1=y 0=n 0 Prod. OCPSF BOD5
			O Fraction=0, {}=1 0 1000 lbs Flow Flow OCPSF Fraction
			40 CFR 415 per day MGD gpm Avg Max
			40 CFR 415.63 Mercury 1 1
			40 CFR 415.63 Diaphragm 1 1
TOTAL UTILITY WW FLOWS:	---	---	
TOTAL OCPSF+BPJ FLOW:	1.7	---	OCPSF+Inorganic 1.7

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC  
Out. 402

## Conventional pollutant loading calculations, BOD<sub>5</sub> and TSS

TABLE 2

### Calculation of BOD<sub>5</sub>, and TSS limits:

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 402

Non-conventional pollutant loading calculations, COD, TOC; Conventional, Oil and Grease

TABLE 3

(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
Guideline Subpart:	COD Avg	COD Max	TOC Avg	TOC Max1000 lbs/1000 lbs/day	Prod. Flow to 1000 lbs Tmt. Plt. per day Fraction	Conv. Factor	COD Avg	COD Max	TOC Avg	TOC Max		
Guideline Total	---	---	---	---	---	---	---	---	---	---	---	---
BPJ Source(s) or Flow Based Guidelines	COD Avg	COD Max	TOC Avg	TOC Max	COD Flow (MGD)	TOC Flow (MGD)	Conv. Factor	COD Avg	COD Max	TOC Avg	TOC Max	
	mg/L	mg/L	mg/L	mg/L	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	
BPJ Source/GL Total	---	---	---	---	---	8.34	---	---	---	---	---	---
COD or TOC/BOD Ratio, COD/BOD5 Source: Ratio	COD Ratio	COD Max	TOC Ratio	TOC Max	BOD5 limit	BOD5 Avg	Conv. Factor	COD Avg	COD Max	TOC Avg	TOC Max	
	Avg	Max	Avg	Max	Avg	Max	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	
All sources	---	---	7.93617	9.489109	340.272	907.392	---	---	2700.456	8610.342	---	---
Ratio Total	---	---	---	---	---	---	---	---	2700.456	8610.342	---	---
COD/TOC limits, precalc.	---	---	---	---	---	---	---	---	---	---	---	---
COD/TOC Total (lbs/day)	---	---	---	---	---	---	---	---	2700.456	8610.342	---	---
Guideline Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max	O&G Avg	O&G Max	Prod. Flow to 1000 lbs Tmt. Plt. per day Fraction	Conv. Factor	O&G Avg	O&G Max	O&G Avg	O&G Max	O&G Avg	O&G Max
	mg/L	mg/L	mg/L	mg/L	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
BPJ Source(s) of Oil and Grease (O&G)	O&G Avg	O&G Max	O&G Avg	O&G Max	O&G Flow (MGD)	Conv. Factor	O&G Avg	O&G Max	O&G Avg	O&G Max	O&G Avg	O&G Max
	mg/L	mg/L	mg/L	mg/L	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
O&G Total (lbs/day)	---	---	---	---	---	8.34	---	---	---	---	---	---
	---	---	---	---	---	8.34	---	---	---	---	---	---

## Calculation of Technology Based Limits for Georgia Gulf Chemicals &amp; Vinyls, LLC

Out. 402

TABLE 4

## Calculation Summary of Conventional and Non-Conventional Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old Anti-BackOut.	402	Out. 402	Out. 402	Out. 402	Out. 402
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Avg	Max	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day=OldvsGL	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L
<b>CONVENTIONAL</b>													
BOD5				340.272	907.392			---	340	907	---	---	---
TSS				567.12	1843.14			---	567	1843	---	---	---
Oil and Grease				---	---			---	---	---	---	---	---
<b>NON-CONVENTIONAL</b>													
COD				---	---			---	---	---	---	---	---
TOC				2700.456	8610.342			---	2700	8610	---	---	---
TRC				---	---			---	---	---	---	---	---
Ammonia Nitrogen				---	---			---	---	---	---	---	---
Organic Nitrogen				---	---			---	---	---	---	---	---
Nitrate Nitrogen				---	---			---	---	---	---	---	---

## Calculation Summary of Metal and Cyanide Toxic Limits

Parameter	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L-BPJ	G/L-BPJ	Process	G/L-BPJ	G/L-BPJ	Tech	Old Tech	Old Anti-BackOut.	402	Out. 402	Out. 402	Out. 402	Out. 402
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Avg	Max	Max
	mg/L	mg/L	(MGD)	lbs/day	lbs/day	lbs/day	lbs/day=OldvsGL	lbs/day	lbs/day	lbs/day	mg/L	mg/L	mg/L
<b>METALS AND CYANIDE</b>													
Total Chromium				---	---			---	---	---	---	---	---
Total Copper				---	---			---	---	---	---	---	---
Total Lead				---	---			---	---	---	---	---	---
Total Nickel				---	---			---	---	---	---	---	---
Total Zinc				---	---			---	---	---	---	---	---
Total Mercury				---	---			---	---	---	---	---	---
Total Cyanide				---	---			---	---	---	---	---	---
Amenable Cyanide				---	---			---	---	---	---	---	---
	---	---		---	---			---	---	---	---	---	---
	---	---		---	---			---	---	---	---	---	---

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC  
Out. 402

## Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

OCPSF Parameter Subpart J	(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)	(*12)	(*13)
	G/L Val	G/L Val	Process G/L Val	G/L Val	Tech Old Tech	Old G/L-BPJ	Out. 402	Out. 402	Out. 402	Out. 402	Out. 402	Out. 402	Out. 402
	Avg.	Max	Flow	Avg	Max	Avg	Max0=no scr.	Avg	Max	Avg	Avg	Avg	Max
mg/L mg/L (MGD) lbs/day lbs/day lbs/day lbs/day lbs/day=OldvsGL lbs/day lbs/day lbs/day mg/L mg/L													
2=Old+GL													
<b>VOLATILE COMPOUNDS</b>													
Acrylonitrile	0.094	0.232	1.7	1.332732	3.289296			---	1.33	3.29	---	---	---
Benzene	0.057	0.134	1.7	0.808146	1.899852			---	0.81	1.90	---	---	---
Carbon Tetrachloride	0.142	0.38	1.7	2.013276	5.38764			---	2.01	5.39	---	---	---
Chlorobenzene	0.142	0.38	1.7	2.013276	5.38764			---	2.01	5.39	---	---	---
Chloroethane	0.11	0.295	1.7	1.55958	4.18251			---	1.56	4.18	---	---	---
Chloroform	0.111	0.325	1.7	1.573758	4.60785			---	1.57	4.61	---	---	---
1,1-Dichloroethane	0.022	0.059	1.7	0.311916	0.836502			---	0.31	0.84	---	---	---
1,2-Dichloroethane	0.18	0.574	1.7	2.55204	8.138172			---	2.55	8.14	---	---	---
1,1-Dichloroethylene	0.022	0.06	1.7	0.311916	0.85068			---	0.31	0.85	---	---	---
1,2-trans-Dichloro- ethylene	0.025	0.066	1.7	0.35445	0.935748			---	0.35	0.94	---	---	---
1,2-Dichloropropane	0.196	0.794	1.7	2.778888	11.25733			---	2.78	11.26	---	---	---
1,3-Dichloropropylene	0.196	0.794	1.7	2.778888	11.25733			---	2.78	11.26	---	---	---
Ethylbenzene	0.142	0.38	1.7	2.013276	5.38764			---	2.01	5.39	---	---	---
Methyl Chloride	0.11	0.295	1.7	1.55958	4.18251			---	1.56	4.18	---	---	---
Methylene Chloride	0.036	0.17	1.7	0.510408	2.41026			---	0.51	2.41	---	---	---
Tetrachloroethylene	0.052	0.164	1.7	0.737256	2.325192			---	0.74	2.33	---	---	---
Toluene	0.028	0.074	1.7	0.396984	1.049172			---	0.40	1.05	---	---	---
1,1,1-Trichloroethane	0.022	0.059	1.7	0.311916	0.836502			---	0.31	0.84	---	---	---
1,1,2-Trichloroethane	0.032	0.127	1.7	0.453696	1.800606			---	0.45	1.80	---	---	---
Trichloroethylene	0.026	0.069	1.7	0.368628	0.978282			---	0.37	0.98	---	---	---
Vinyl Chloride	0.097	0.172	1.7	1.375266	2.438616			---	1.38	2.44	---	---	---
<b>ACID COMPOUNDS</b>													
2-Chlorophenol													
2,4-Dichlorophenol													
2,4-Dimethylphenol	0.019	0.047	1.7	0.269382	0.666366			---	0.27	0.67	---	---	---
4,6-Dinitro-o-cresol	0.078	0.277	1.7	1.105884	3.927306			---	1.11	3.93	---	---	---
2,4-Dinitrophenol	1.207	4.291	1.7	17.11285	60.8378			---	17.11	60.84	---	---	---
2-Nitrophenol	0.065	0.231	1.7	0.92157	3.275118			---	0.92	3.28	---	---	---
4-Nitrophenol	0.162	0.576	1.7	2.296836	8.166528			---	2.30	8.17	---	---	---
Phenol	0.019	0.047	1.7	0.269382	0.666366			---	0.27	0.67	---	---	---

Calculation of Technology Based Limits for Georgia Gulf Chemicals & Vinyls, LLC  
Out. 402

## Calculation of Toxic Limits, OCPSF Subpart J

TABLE 5

OCPSF Parameter Subpart J	(*1) G/L Val Avg. mg/L	(*2) G/L Val Max mg/L	(*3) Process Flow (MGD)	(*4) G/L Val Avg lbs/day	(*5) G/L Val Max lbs/day	(*6) Tech Old Tech lbs/day	(*7) Old Anti-BackOut lbs/day=OldvsGL	(*8) Tech Old Tech lbs/day=Old+GL	(*9) Max0=no scr. Avg lbs/day	(*10) Anti-BackOut Avg lbs/day	(*11) Out. 402 Max lbs/day	(*12) Out. 402 Avg mg/L	(*13) Out. 402 Max mg/L
<b>BASE/NEUTRAL COMPOUNDS</b>													
Acenaphthene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Acenaphthylene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Anthracene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Benzo(a)anthracene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Benzo(a)pyrene	0.02	0.048		1.7 0.28356	0.680544				---	0.28	0.68	---	---
3,4-Benzofluoranthene	0.02	0.048		1.7 0.28356	0.680544				---	0.28	0.68	---	---
Benzo(k)fluoranthene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Bis(2-ethylhexyl)-phthalate	0.095	0.258		1.7 1.34691	3.657924				---	1.35	3.66	---	---
Chrysene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
1,2-Dichlorobenzene	0.196	0.794		1.7 2.778888	11.25733				---	2.78	11.26	---	---
1,3-Dichlorobenzene	0.142	0.38		1.7 2.013276	5.38764				---	2.01	5.39	---	---
1,4-Dichlorobenzene	0.142	0.38		1.7 2.013276	5.38764				---	2.01	5.39	---	---
Diethyl phthalate	0.046	0.113		1.7 0.652188	1.602114				---	0.65	1.60	---	---
Dimethyl phthalate	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Di-n-butyl phthalate	0.02	0.043		1.7 0.28356	0.609654				---	0.28	0.61	---	---
2,4-Dinitrotoluene													
2,6-Dinitrotoluene													
Fluoranthene	0.022	0.054		1.7 0.311916	0.765612				---	0.31	0.77	---	---
Fluorene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Hexachlorobenzene	0.196	0.794		1.7 2.778888	11.25733				---	2.78	11.26	---	---
Hexachlorobutadiene	0.142	0.38		1.7 2.013276	5.38764				---	2.01	5.39	---	---
Hexachloroethane	0.196	0.794		1.7 2.778888	11.25733				---	2.78	11.26	---	---
Naphthalene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Nitrobenzene	2.237	6.402		1.7 31.71619	90.76756				---	31.72	90.77	---	---
Phenanthrene	0.019	0.047		1.7 0.269382	0.666366				---	0.27	0.67	---	---
Pyrene	0.02	0.048		1.7 0.28356	0.680544				---	0.28	0.68	---	---
1,2,4-Trichlorobenzene	0.196	0.794		1.7 2.778888	11.25733				---	2.78	11.26	---	---

Documentation and Explanation of Technology Calculations  
and Associated Lotus Spreadsheet

This is a multi-sector technology spreadsheet covering the following two guidelines: 40 CFR 414, Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF), 40 CFR 415.62 and 40 CFR 415.63, and Chlor-Alkali Subcategory of Subpart F of the Inorganic Chemical Guidelines on a case-by-case basis. Regulations at 40 CFR 144(a)/LAC 33.IX.2707 require that technology-based permit limitations be placed in permits based on effluent limitations guidelines where applicable, on Best Professional Judgement (BPJ) in the absence of guidelines or on a combination of the two. Best Available Technology Economically Achievable (BAT) guideline factors and concentrations are used for non-conventional and toxic pollutants. In the absence of BAT, Best Conventional Pollutant Control Technology (BCT) is used for non-conventional pollutants. In the absence of either BAT or BCT, Best Practicable Control Technology (BPT) is used for conventional and non-conventional pollutants. BPT is used for conventional pollutants. New Source Performance Standards (NSPS) are used as the situation dictates, however in the case of the OCPSF guidelines, NSPS=BAT. In the absence of an applicable guideline for a particular parameter, BPJ shall be utilized. The term, "monthly average" or "average", refers to the 30-day monthly average of daily maximum values, "daily maximum" or "maximum", refers to the maximum for any one day. The term, "previous permit", refers to the most recently issued NPDES or LPDES permit. If the previous permit did not give a BPJ allowance for particular wastewater, none will be granted in the reissuance in accordance with CWA 402(o), and 40 CFR 122.44.1/LAC 33.IX.2707.L. The spreadsheet is set up in a table and column/section format. Each table represents a general category for data input or calculation points. Each reference column or section is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*10). These columns or sections represent inputs, existing data sets, calculation points, or results for determining technology based limits for an effluent of concern.

Table 1

Table 1 is the data input area for the OCPSF guidelines and the inorganic chemical guidelines, Sections (\*2), (\*3), (\*4), (\*5), (\*6), (\*7), (\*8), (\*10), and (\*11). The Page and Table numbering sequence section is Section (\*9) and the generalized input information is Section (\*1).

(\*1) General input information:

Permittee - permittee name.

Permit Number- LPDES permit number.

Appendix- Appendix designation for the header.

1=Flow Basis 0=proc, 0=all- if the flow basis for concentration limits is the same as the process flow in determining mass limits, then a "1" is placed in the designated cell. A "0" indicates the total outfall

flow will be used in determining concentration based limits. See Concentration flow (MGD).

Concentration flow (MGD)- flow used for calculating concentration based limits in MGD.

GL vs Old, 0=n, 1=y, 2=GL+Old- this is the anti-backsliding (40 CFR 122.44.1, LAC 33.IX.2707.L) screening designation switch. "Old" represents the previous permit limit established by Best Professional Judgement (BPJ), which is now BAT for that facility, and "GL" represents the current guideline calculation. If the screen indicates that the previously established limitation is more stringent, but there has been an increase in production, another spreadsheet can be run giving guideline allowances for the production increase by putting a "2" in the specified cell. This cell sets a default for all anti-backsliding throughout the spreadsheet, but different options can be selected on a parameter specific basis.

Outfall number- Outfall number is placed in the designated cell, the default is "Out. 001", abbreviated due to space limitations in other portions of the spreadsheet.

Deepwell fract... 40 CFR 122.50/LAC 33:IX.2717- this applies to any situation where a discharger that falls under mass based guidelines or mass based BPJ and is discharging a portion of their wastewater to a surface water receiving stream and the remaining portion to a deepwell (most common in La.), POTW, offsite disposal, etc. The facility's mass based limitations must be reduced by the fraction of water not being discharged to the surface water receiving the discharge. Flow based guideline effluent limitations and associated BPJ will receive adjustments in their source flows.

- (\*2) OCPSF Flow Calculations- OCPSF flow calculations are divided into four basic categories, 1) process, 2) sanitary wastewater, 3) miscellaneous flows, and 4) utility wastewater. Additional flows may be entered as needed. Flows can either be entered as MGD or gpm units in the designated column. The process flow is used to calculate organic toxic limitations if the facility's annual production exceeds 5 million pounds per year of final product. Process flow includes flows generated by the manufacturing process, process area stormwater, and process lab water as stated in 40 CFR 414. Other flows, such as groundwater remediation wastewater, are considered as process wastewaters on a BPJ basis. Additional flows such as utility, sanitary, and miscellaneous wastewaters are used in determining additional BPJ allocations for BOD, and TSS limitations, but not toxics. Miscellaneous wastewater includes, but is not limited to, wastewaters from tank farms or chemical storage areas or uncontaminated stormwater. Utility wastewater includes, but is not limited to, non-contact cooling tower blowdown, boiler blowdown, filter backwash, etc.

- (\*3) Fraction of OCPSF Conc. or BPJ 11. Utility, Miscellaneous and other wastewaters contribute BOD<sub>5</sub> and TSS loadings to the process outfall if these wastewaters are discharged through the process outfall. For miscellaneous wastewaters, a BPJ determination has been made that these wastewaters receive 50% of the production weighted OCPSF concentrations for BOD<sub>5</sub> and TSS. For utility wastewaters, a BPJ determination has been made that these wastewaters receive 25% of the production weighted OCPSF concentrations for BOD<sub>5</sub> and TSS. Sanitary wastewaters shall receive BOD<sub>5</sub> and TSS allocations of 30 mg/L, average, and 45 mg/L, maximum, as treatment equivalent to secondary treatment (LAC 33.IX.711.D). Other wastewaters shall be approached on a case-by-case basis. Anti-backsliding concerns and/or a previous permit may preclude the usage of the weighted OCPSF concentrations described above. Different BOD<sub>5</sub> and TSS fractions may be used as the situation dictates. If the previous permit contains other concentrations, they may be utilized instead of fractions of production weighted OCPSF concentrations.
- (\*4) Metal+CN Flow- The OCPSF guidelines specify that only a specific metal bearing wastestream shall receive allowances under the guideline (40 CFR 414.90, 414.100). However, through experience, it has been determined that there are several other potential sources of metals throughout a facility other than from a catalyst in a metal bearing wastestream especially in an acidic wastestream. Examples of these sources include reaction vessels and equipment, piping, cooling towers, boilers, raw contaminants, etc. In consideration of these factors, the whole toxics process flow is utilized per BPJ in the calculation of metal limits unless anti-backsliding concerns (40 CFR 122.44.1, LAC 33.IX.2707.L) and/or a previous permit prescribe the use of a lesser flow. For situations where site-specific metal bearing flows (BPJ and OCPSF guideline) need to be calculated, the "Site-Specific Metal, Cyanide, and Total Residual Chlorine (TRC) Bearing Flows" table is used. Flow is entered in MGD or gpm under the specified column on the row(s) containing the metal(s) of concern.
- (\*5) OCPSF Guideline Subpart- BOD<sub>5</sub> and TSS mass limitations are calculated using a production weighted concentration. Organic chemical production figures in 1000/lbs day or production fractions of the total may be entered on the row(s) with the indicated subpart under the designated column. The production fraction will be used more frequently as many companies consider production information confidential. If a facility manufactures under only one subpart, then the production fraction shall be unity (1).
- (\*6) COD & TOC Ratios/COD, TOC, O&G 11- Under the ratio section, it may be necessary to determine COD or TOC BPJ loadings based on BOD<sub>5</sub> limitations or loadings. The appropriate ratios are entered in the indicated cells. BPJ loadings for COD, TOC, and Oil and Grease (O&G) may also be determined on a concentration basis. Concentrations and flows are entered in the indicated cells. The ratios/concentrations are usually based on the previously issued permit, if one exists. If this is a new

permit issuance or major modification involving a new unit, then the ratios/concentrations are usually based on similarly permitted facilities.

- (\*7) Inorganic Effluent Guidelines (40 CFR 415)- Inorganic guideline subpart and associated production and flow are entered as indicated. Chlor-Alkali guidelines (40 CFR 415.63) are present by default since chlor-alkali operations are most frequently associated with the production of organic chemicals (chlorinated solvents, vinyl chloride monomer, etc.). New sources are indicated by placing a "1" or a "0" in the indicated cell. O Fraction=0, l1=1, indicates whether the BPJ BOD<sub>5</sub> allocation fraction is entered in terms of weighted OCPSF concentrations, indicated by a "0", or other concentration under the labeled columns, indicated by a "1". Production information is entered in terms of 1000 lbs per day. Flow is entered in MGD or gpm in the appropriate column. Other inorganic guideline input information is included on a case-by-case basis.
- (\*8) OCPSF Alternate Flows- On a case-by-case basis it may be necessary to utilize an alternate flow for the calculation of the conventional pollutants BOD<sub>5</sub> and TSS loadings or the calculation of the organic toxic loadings. This will most commonly occur in cases where a deepwell is being eliminated. Units are in MGD.
- (\*9) Page and Table numbering sequence- This section shall be used for all guideline calculations and combinations. The user can specify that the spreadsheet number the pages and tables in accordance with the guidelines/tables being used. Unused pages and tables are numbered "0". This section also controls the printing of the spreadsheet; non-numbered pages are not printed.
- (\*10) Precalculated COD and TOC limits- Occasionally it may be necessary to incorporate a precalculated technology-based limit for TOC or COD based on DMR's or other sources, such as a previously issued permit. These values are entered in the designated cells.
- (\*11) Inorganic Flow Sources- Although flow is not used in calculating mass limits under the inorganic effluent guidelines, these flows are sometimes used in allocating BPJ loadings or for informational purposes.

**Table 2**

Table 2 is a calculation table for the conventional pollutant loadings of BOD<sub>5</sub> and TSS utilizing guidelines and BPJ.

- (\*1) The top portion of the table lists OCPSF subparts under 40 CFR 414. The bottom portion indicated by "Other Sources/Guidelines" lists non-guideline BPJ sources, sanitary wastewater, non-process area stormwater,

miscellaneous wastewaters, utility wastewaters, under "Other Sources" and other contributing guidelines under "Other Guidelines".

- (\*2) Average BOD- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.
- (\*3) Maximum BOD- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic allocations are made by BPJ.
- (\*4) Average TSS- Average BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (\*5) Maximum TSS- Maximum BPT guideline concentrations in mg/L, lbs/1000 lbs of daily production, or BPJ concentrations in mg/L. Inorganic wastewater TSS limitations are calculated in accordance with 40 CFR 415, which are mass based effluent guidelines.
- (\*6) Production in 1000 lbs/day- These values indicate the amount of production per subpart.
- (\*7) At the top of the table, Production fraction of total. These values are based on a fraction of total OCPSF production per subpart. If all OCPSF manufacturing falls under one subpart, the fraction shall be unity (1).

At the bottom of the table, Flow to Treatment Plant Fraction. Applicable to mass-based guidelines; if a portion of a process wastewater is being injected to a deepwell, POTW, or other non-surface water source, this represents the remaining fraction being discharged to the receiving water.

- (\*8) Flow- For the OCPSF guideline portion of the table (the upper portion), this is the process flow calculated in Table 1. Under "BPJ Sources/Guidelines", these are the other categorical BPJ flows calculated in Table 1. Under the "Other Guideline" section, this is the flow associated with the production under that guideline part or subpart. Flows associated with mass-based guidelines are not used in calculations.
- (\*9) Conversion factor- used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.
- (\*10) BOD, Average, lbs/day- For OCPSF guideline allocations the concentration in column (\*2) is multiplied by the production fraction in column (\*7), the flow in column (\*8), the conversion factor in column

(\*9) yielding a monthly average BOD<sub>5</sub> loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (\*2) is multiplied by the production value in (\*6), and the flow to treatment plant fraction in column (\*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. Inorganic wastewaters receive a BOD<sub>5</sub> allocation provided that anti-backsliding does not apply. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted". The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average BOD<sub>5</sub>.

- (\*11) BOD<sub>5</sub>, Maximum, lbs/day- Similar to column (\*10). See column (\*10).
- (\*12) TSS, Average, lbs/day- For OCPSF guideline allocations the concentration in column (\*4) is multiplied by the production fraction in column (\*7), the flow in column (\*8), the conversion factor in column (\*9) yielding a monthly average BOD<sub>5</sub> loading applicable to that subpart. BPJ Source allocations are determined similarly to the OCPSF guideline allocations. If mass-based guidelines are being considered under Other Guidelines", the guideline factor in column (\*4) is multiplied by the production value in (\*6), and the flow to treatment plant fraction in column (\*7) if there is deepwell, POTW, or other disposal of process wastewater not to a surface water receiving stream. The OCPSF guideline loadings are summed on the row with the label, "Total/Weighted". The BPJ Sources loadings including the OCPSF BPJ loadings are summed on the row labeled, "BPJ Source Total". Other Guideline contributions are summed on the line labeled "Other Guideline Total (lbs/day)". The grand total is on the indicated row and this is the technology limit for Monthly Average TSS.

- (\*13) TSS, Maximum, lbs/day- Similar to column (\*12). See column (\*12).

**Table 3 Appendices A-2 and A-3 only**

Table 3 (see above) is a calculation table for the guideline and BPJ pollutant loadings of COD, TOC, and Oil and Grease.

- (\*1) Lists applicable guideline subparts, and sources that contribute COD, TOC, and Oil and Grease loading.
- (\*2) Average COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD<sub>5</sub> ratio, and Average O&G BPJ concentration (mg/L). COD to BOD<sub>5</sub> ratios or concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD<sub>5</sub> and COD, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD<sub>5</sub> and

COD, 3) from the application. BPJ Oil and Grease concentration(s) are calculated utilizing the principles of mass balance, flow, and mass loadings from the previously issued NPDES permit.

- (\*3) Maximum COD or O&G guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), COD to BOD<sub>5</sub> ratio, and Maximum O&G BPJ concentration (mg/L). See discussion for column (\*2).
- (\*4) Average TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), and TOC to BOD<sub>5</sub> ratio. TOC to BOD<sub>5</sub> ratios and TOC concentrations are calculated in the following order of precedence: 1) from the previously issued NPDES permit with BOD<sub>5</sub> and TOC, 2) from the previously issued Louisiana Water Discharge Permit System (LWDPS) permit with BOD<sub>5</sub> and TOC, 3) from the application.
- (\*5) Maximum TOC guideline factor (lbs/1000 lbs daily production), BPJ or guideline concentration (mg/L), or TOC to BOD<sub>5</sub> ratio. See discussion for column (\*4).
- (\*6) Production in 1000 lbs/day/BOD<sub>5</sub> limit, Average- Indicates amount of production per guideline subpart. Under the ratio section, BOD<sub>5</sub> limit, Average, this is a previously calculated average BOD<sub>5</sub> limit.
- (\*7) Flow to Treatment Plant Fraction/COD Flow, MGD/BOD<sub>5</sub> limit, Maximum/O&G Flow, MGD- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation. Under the BPJ Source(s) or Flow based Guidelines section, COD Flow, MGD, is entered in the indicated cell. Under the ratio section, BOD<sub>5</sub> limit, Maximum, this is a previously calculated maximum BOD<sub>5</sub> limit. Under the BPJ Source(s) Oil and Grease (O&G) section, O&G Flow, MGD, is entered in the indicated cell.
- (\*8) TOC Flow, MGD - Under the BPJ Source(s) or Flow based Guidelines section, TOC Flow, MGD is entered in the indicated cell.
- (\*9) Conversion factor used in conjunction with flow (MGD) for converting mg/L to lbs per day, 8.34 lbs/gallon. Mg/L is assumed to be equivalent to ppm.
- (\*10) Average COD or O&G loading per source indicated on the specified row in lbs/day. Under the mass-based guideline section, this is calculated by multiplying the process factor in column (\*2) by the daily production value in column (\*6), and the flow to treatment plant fraction in column (\*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means. Under BPJ Sources or Flow based Guidelines or the BPJ Source(s) Oil and Grease (O&G) sections, loadings are determined by multiplying the concentration specified in column (\*2) by the flow in column (\*7) and the conversion factor in column (\*9).

Total COD limits applicable to the permitted outfall are found on the row labeled, "COD/TOC Total (lbs/day)". Total Oil and Grease loadings are specified on the row labeled, "O&G Total (lbs/day)".

- (\*11) Maximum COD or O&G loading. Similar to column (\*10). See description for column (\*10).
- (\*12) Average TOC loading. Similar to column (\*10). See description for column (\*10).
- (\*13) Maximum TOC loading. Similar to column (\*10). See description for column (\*10).

**Table 3 - Appendix A-1 only**

Table 3 (see above) includes calculations for the heavy metals, Total Chromium, Total Copper, Total Lead, Total Nickel, Total Zinc, Total Cyanide, Total Mercury, Total Residual Chlorine (TRC), and Amenable Cyanide utilizing BAT, NSPS, or BPJ as indicated.

- (\*1) Subcategory and/or Source- This specifies the applicable guideline subpart, subcategory, or BPJ source. When site-specific OCPSF metal limits are being calculated, the categorical source will be displayed: process wastewater, miscellaneous and utility wastewater, and non-ocpsf wastewater.
- (\*2) Average (parameter) guideline factor (lbs/1000 lbs daily production), or BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 0.9 mg/L, average, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.
- (\*3) Maximum (parameter) guideline factor (lbs/1000 lbs daily production), BPJ concentration (mg/L). Parameter is the indicated metal, cyanide, or TRC. BPJ concentrations for TRC are usually 1.5 mg/L, maximum, from the Inorganic Chemicals Development Document (Phase I) pg. 183, EPA 440/1-82/007, associated with chlor-alkali production.
- (\*4) Same as (\*2).
- (\*5) Same as (\*3).
- (\*6) Production in 1000 lbs/day- Applicable to mass based effluent guidelines, these values indicate the amount of production in 1000 lbs/day.
- (\*7) Flow to Treatment Plant Fraction- If a facility with mass-based guidelines is discharging a portion of their wastewater to a deepwell, POTW, or other source that is not the receiving water(s), the remaining

fraction discharged to the surface receiving water(s) is placed in this column for mass-based limit calculation.

- (\*8) Parameter flow in MGD- This flow is associated with the parameter specified in columns (\*2) and (\*3) and is used in determining flow based loadings.
- (\*9) Parameter flow in MGD- This flow is associated with the parameter specified in columns (\*4) and (\*5) and is used in determining flow based loadings.
- (\*10) Average guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (\*2) times the flow specified in column (\*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (\*2) is multiplied times the daily production value specified in column (\*6) and the flow to treatment plant fraction in column (\*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.
- (\*11) Maximum guideline subcategory/subpart or source quantity allowance in lbs/day for specified parameter. For concentration-based guidelines/BPJ, this is determined by multiplying the concentration specified in column (\*3) times the flow specified in column (\*8) times the conversion factor 8.34. For mass-based guidelines the guideline process factor in column (\*3) is multiplied times the daily production value specified in column (\*6) and the flow to treatment plant fraction in column (\*7) if process wastewater is being discharged to a deepwell, POTW, or other non-surface water means.
- (\*12) Similar to column (\*10). See description for (\*10).
- (\*13) Similar to column (\*11). See description for (\*11).

Table 4

Table 4 (see above) is a calculation summary table for Conventional, Non-Conventional, and Toxic limits. If there is one consolidated OCPSF metal bearing waste stream per metal and this is the only metal source, then the guideline concentrations in columns (\*2) (Daily Average) and (\*3) (Daily Maximum) are multiplied times the flow in column (\*4) times the conversion factor of 8.34 to yield daily average and daily maximum guideline loadings in lbs/day in columns (\*5) and (\*6), respectively.

- (\*1) Parameter- The parameters are organized into three groups, Conventional, Non-Conventional, and Metals and Cyanide.
- (\*2) Average guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the

listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSP only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.

- (\*3) Maximum guideline/BPJ value- Guideline or BPJ value in terms of concentration, mg/L. If there are multiple sources/allocations for the listed metals/cyanide, these values will not be indicated in this column. Single or consolidated metal/cyanide bearing waste streams (OCPSP only) will have values indicated in this column. Values will not be indicated for the conventional and non-conventional pollutants listed.
- (\*4) Process flow in MGD- Similar to columns (\*2) and (\*3), this column will be left blank unless there is one consolidated metal/cyanide bearing waste stream.
- (\*5) Average Guideline/BPJ effluent limitation in lbs/day. Except for the metal/cyanide situation discussed in column (\*2), these values are calculated in other tables and summarized in this column.
- (\*6) Maximum Guideline/BPJ effluent limitation in lbs/day. Similar to column (\*5).
- (\*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits ( $\approx 10\%$  or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.
- (\*8) Maximum Tech Old in lbs/day- Similar to (\*7).
- (\*9) Antiback, 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (\*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (\*10) and (\*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Tech is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (\*4) and (\*5) are subsequently added to the values in columns (\*7) and (\*8) yielding technology-based effluent

limitations in columns (\*10) and (\*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.

- (\*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*5). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*6). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*12) Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*10). The formula is as follows:  
effluent limit, lbs/day  
flow, MGD \* 8.34
- (\*13) Maximum technology based effluent limit in mg/L- Similar to column (\*11), a concentration limit can be calculated using the specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*11). The formula is as follows:  
effluent limit, lbs/day  
flow, MGD \* 8.34

Table 5

Table 5 calculates the organic toxic technology effluent limitations based on BAT/NSPS established in the OCPSF guidelines, Subpart I or J as indicated. The column designations are very similar to those used for the summary table for Conventional pollutants, Non-Conventional pollutants, and Metals and Cyanide.

- (\*1) Parameter. The parameters are organized into three groups, Volatile Compounds, Acid Compounds, and Base/Neutral Compounds.
- (\*2) Average guideline value (BAT/NSPS) in terms of concentration in mg/L.
- (\*3) Maximum guideline value (BAT/NSPS) in terms of concentration in mg/L.
- (\*4) OCPSF process flow in MGD.
- (\*5) Average guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (\*2) times the flow in column (\*4) times the conversion factor of 8.34.

- (\*6) Maximum guideline limit in lbs/day- Calculated by multiplying the guideline concentration in column (\*3) times the flow in column (\*4) times the conversion factor of 8.34. Similar to column (\*5).
- (\*7) Average Tech Old in lbs/day- This column is utilized when an anti-backsliding concern (CWA 402(o), 40 CFR 122.44.1, LAC 33.IX.2707.L) is present. This would be indicated by significantly higher limits ( $\approx 10\%$  or greater) calculated under guidelines than those previously established in the previous permit on a BPJ basis (now achievable technology, if the permittee is meeting the limits) before guideline issuance. If the previously issued permit (as applicable) contains limits for the parameter of concern and an anti-backsliding concern is present, the limits from the previously issued permit are placed in this column in lbs/day.
- (\*8) Maximum Tech Old in lbs/day- Similar to (\*7).
- (\*9) Antiback. 0=no scr., 1=OldvsGL, 2=Old+GL- Anti-Backsliding screening switch. The default is set under section (\*1) in Table 1. If a screen is conducted, a "1" will appear in this column. The more stringent permit limits will appear in columns (\*10) and (\*11). If the screen indicates that the previously issued permit limit utilizing BPJ-Technology is more stringent and an increase in production has occurred, the technology based limits can be recalculated by running the spreadsheet a second time using guidelines for the increase only. This will be indicated by a "2" in this column. The recalculated guideline limitations in columns (\*4) and (\*5) are subsequently added to the values in columns (\*7) and (\*8) yielding technology-based effluent limitations in columns (\*10) and (\*11). The values in this column can be changed on a row-by-row basis for site-specific screening situations.
- (\*10) Average technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*5). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*11) Maximum technology based effluent limit in lbs/day- If no anti-backsliding screening is conducted then the value in this column will be equal to the value in column (\*6). When anti-backsliding screening is used, see discussion for column (\*9).
- (\*12) Daily Average technology based effluent limit in mg/L- A concentration limit can be calculated using the specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*10). The formula is as follows:  
effluent limit, lbs/day  
flow, MGD \* 8.34
- (\*13) Daily Maximum technology based effluent limit in mg/L- Similar to column (\*11), a concentration limit can be calculated using the

Appendix A-4  
LA0007129, AI No. 2455  
Page 13

specified concentration flow from section (\*1) in Table 1 and the mass limitation calculated under column (\*11). The formula is as follows:

effluent limit, lbs/day

flow, MGD \* 8.34

## **Appendix B**

wqsadd.wk4 Date: 01/31 Appendix B-1 Page 1  
Developer: Bruce Fielding Time: 04:22 PM Georgia Gulf Chemicals & Vinyls, LLC  
Software: Lotus 4.0 LA0007129, AI2455  
Revision date: 03/02/01

Total Loading for Outfalls 102, 202, and 402

Input variables:

Permittee Georgia Gulf Chemicals & Vinyls, LLC  
Permit Number LA0007129, AI2455

Outfalls to be summed: Outfall#:Flow, MGD:

Outfall	102	1.535
Outfall	202	1.344
Outfall	402	1.7

Outfall list 102, 202, and 402

Page Numbering/Labeling

Appendix	Appendix B-1
Page Numbers 1=y, 0=n	1
Input Page # 1=y, 0=n	1

Documentation:

This is a simple spreadsheet used for summing the total loadings from up to three outfalls for the purpose of water quality screening. Technology limits and/or end-of-pipe measurements are added for a total facility loading. Calculation columns are indicated with an asterisk and number enclosed by parentheses. For example, (\*1) or (\*9). The term "N/A" will appear in column headers if there are less than 3 outfalls being summed.

Explanation of column calculations:

- (\*1) Parameter being screened
- (\*2) Monthly average technology or effluent value in mass units of lbs/day.
- (\*3) Daily maximum technology or effluent value in mass units of lbs/day.
- (\*4) Similar to column (\*2). See explanation for column (\*2).
- (\*5) Similar to column (\*3). See explanation for column (\*3).
- (\*6) Similar to column (\*2). See explanation for column (\*2).
- (\*7) Similar to column (\*3). See explanation for column (\*3).
- (\*8) Sum of daily averages in columns (\*2), (\*4), and (\*6).
- (\*9) Sum of daily maximums in columns (\*3), (\*5), and (\*7).

## Appendix B-1

Page 2

Total Loading for Outfalls 102, 202, and 402  
LA0007129, AI2455

(*1) Toxic Parameters	(*2) Outfall 102		(*4) Outfall 202		(*6) Outfall 402		(*8) Total Loading	
	(Avg)	(Max)	(Avg)	(Max)	(Avg)	(Max)	(Avg)	(Max)
	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
<b>NONCONVENTIONAL</b>								
Total Phenols (4AAP)							---	---
3-Chlorophenol							---	---
4-Chlorophenol							---	---
2,3-Dichlorophenol							---	---
2,5-Dichlorophenol							---	---
2,6-Dichlorophenol							---	---
3,4-Dichlorophenol							---	---
2,4-Dichlorophenoxy-acetic acid (2,4-D)							---	---
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP, Silvex)							---	---
<b>METALS AND CYANIDE</b>								
Total Arsenic							---	---
Total Cadmium							---	---
Chromium III	---	---	---	---	---	---	---	---
Chromium VI	---	---	---	---	---	---	---	---
Total Copper	13.2104	32.352	2.64	6.15	---	---	15.8504	38.502000
Total Lead	6.4704	15.9064	---	---	---	---	6.4704	15.906400
Total Mercury	*		---	---	---	---	---	---
Total Nickel	9.9752	26.1512	3.07	7.24	---	---	13.0452	33.391200
Total Zinc			1.91	4.75	---	---	1.91	4.750000
Total Cyanide	---	---	---	---	---	---	---	---
<b>DIOXIN</b>								
2,3,7,8 TCDD; dioxin							---	---
<b>VOLATILE COMPOUNDS</b>								
Benzene	0.322195	1.184283	0.808146	1.899852	1.130341	3.084135		
Bromoform					---	---		
Bromodichloromethane					---	---		
Carbon Tetrachloride	0.156743	0.330903	2.013276	5.38764	2.170019	5.718543		
Chloroform	0.182867	0.400566	1.573758	4.60785	1.756625	5.008416		
Dibromochloromethane					---	---		
1,2-Dichloroethane(EDC)	0.592141	1.83738	2.55204	8.138172	3.144181	9.975552		
1,1-Dichloroethylene	0.139327	0.217699	0.311916	0.85068	0.451243	1.068379		
1,3-Dichloropropylene	0.252531	0.38315	2.778888	11.25733	3.031419	11.640482		
Ethylbenzene	0.278655	0.94046	2.013276	5.38764	2.291931	6.328100		
Methyl Chloride	0.748885	1.654513	1.55958	4.18251	2.308465	5.837023		
Methylene Chloride	0.348318	0.775009	0.510408	2.41026	0.858726	3.185269		
1,1,2,2-Tetrachloroethane			---	---	---	---		

102, 202, and 402                           Total Loading for Outfalls  
LA0007129, AI2455

Toxic Parameters	(*)1	(*)2	(*)3	(*)4	(*)5	(*)6	(*)7	(*)8	(*)9
	Outfall	Total	Total						
	102	102	202	202	402	402	(Avg)	Loading	Loading
	(Avg)	(Max)	(Avg)	(Max)	(Avg)	(Max)	(Avg)	(Max)	(Avg)
	lbs/day								

## VOLATILE COMPOUNDS (cont'd)

Tetrachloroethylene	0.191575	0.487646	0.737256	2.325192	0.920831	2.812838
Toluene	0.226407	0.696637	0.396984	1.049172	0.623391	1.745809
1,1,1-Trichloroethane	0.182867	0.47023	0.311916	0.836502	0.494783	1.306732
1,1,2-Trichloroethane	0.182867	0.47023	0.453696	1.800606	0.636563	2.270836
Trichloroethylene	0.182867	0.47023	0.368628	0.978282	0.551495	1.448512
Vinyl Chloride	0.905628	2.333733	1.375266	2.438616	2.280894	4.772349

## ACID COMPOUNDS

2-Chlorophenol	0.269947	0.85338			0.269947	0.853380
2,4-Dichlorophenol		0.33961	0.975292		0.33961	0.975292

## BASE NEUTRAL COMPOUNDS

Benzidine					---	---
Hexachlorobenzene	0.130619	0.243823	2.778888	11.25733	2.909507	11.501155
Hexachlorabutadiene	0.174159	0.42669	2.013276	5.38764	2.187435	5.814330

## PESTICIDES

Aldrin					---	---
Hexachlorocyclohexane (gamma BHC, Lindane)					---	---
Chlordane					---	---
4,4'-DDT					---	---
4,4'-DDE					---	---
4,4'-DDD					---	---
Dieldrin					---	---
Endosulfan					---	---
Endrin					---	---
Heptachlor					---	---
Toxaphene					---	---

## Other Parameters:

Fecal Colif. (col/100ml)					---	---
Chlorine					---	---
Ammonia					---	---
Chlorides					---	---
Sulfates					---	---
TDS					---	---
Goldbook Values:					---	---

wqsmodn.wk4 Date: 02/01  
 Developer: Bruce Fielding Time: 07:39 AM  
 Software: Lotus 4.0 LA0007129, AI2455  
 Revision date: 12/13/02

Appendix B-2

Page 1

Water Quality Screen for Georgia Gulf Chemicals & Vinyls, LLC

Input variables:

Receiving Water Characteristics:		ZID Fs = 0.481782	Dilution: 0.033333	Toxicity Dilution Series:	Biomonitoring dilution: 0.005337
Receiving Water Name= Mississippi River, 070301				Dilution Series Factor:	0.75
Critical flow (Qr) cfs= 141,955 68391.4 MZ Fs = 0.333333				Percent Effluent	
Harm. mean/avg tidal cfs= 362,748 174765.5 Critical Qr (MGD)=44201.36				Dilution No. 1	0.712%
Drinking Water=1 HHNPCR=2	1	Harm. Mean (MGD)= 112951	ZID Dilution = 0.005312	Dilution No. 2	0.5337%
Marine, 1=y, 0=n		MZ Dilution = 0.000534	ZID Hardness= ---	Dilution No. 3	0.4003%
Rec. Water Hardness= 147.4		HHnc Dilution= 0.000178	MZ TSS= ---	Dilution No. 4	0.3002%
Rec. Water TSS= 42.2		HHc Dilution= 0.00007	ZID Upstream = 187.2622	Dilution No. 5	0.2252%
Fisch/Specific=1, Stream=0		MZ Upstream = 1872.622		Partition Coefficients; Dissolved-->Total	
Diffuser Ratio=		MZhnc Upstream= 5617.865			
Effluent Characteristics:				METALS	FW
Permittee= Georgia Gulf Chemicals & Vinyls, LLC				Total Arsenic	2.318486
Permit Number= LA0007129, AI2455				Total Cadmium	3.459061
Facility flow (Qef), MGD= 7.868		MZhhc Upstream= 14355.74	ZID Hardness= ---	Chromium III	5.366276
		ZID TSS= ---	MZ Hardness= ---	Chromium VI	1
Outfall Number = 002		MZ TSS= ---	ZID TAA= 0.32	Total Copper	3.751785
Eff. data, 2-lbs/day	2	WLAc --> LTAc	WLAA --> LTAA	Total Lead	6.918621
MQL, 2-lbs/day	1	WLAc --> LTAC	0.53	Total Mercury	2.717332
Effluent Hardness= N/A		Multipliers:	WLAA --> WQBL avg	Total Nickel	3.449517
Effluent TSS= N/A		LTA a,c-->WQBL max	1.31	Total Zinc	4.841526
WQBL ind. 0=y, 1=n		LTA a,c-->WQBL max	3.11	Aquatic Life, Dissolved	
Acute/Chr. ratio 0=n, 1=y	1	LTA h --> WQBL max	2.38	Metal Criteria, ug/L	
Aquatic,acute only 1=y, 0=n		WQBL-limit/report	2.13	METALS	ACUTE CHRONIC
Page Numbering/Labeling		WLAA Fraction	1	Arsenic	339.8 150
Appendix	Appendix B-2	WLAc Fraction	1	Cadmium	48.41938 1.373268
Page Numbers 1=y, 0=n	1	WQBL Fraction	1	Chromium III	753.9882 244.586
Input Page # 1=y, 0=n	1	Conversions:		Chromium VI	15.712 10.582
Fischer/Site Specific inputs:		ug/L-->lbs/day Qef0.065619		Copper	26.55781 17.11276
Pipe=1, Canal=2, Specific=3		ug/L-->lbs/day Qeo 0		Lead	98.26533 3.829259
Pipe width, feet		ug/L-->lbs/day Qr 1183.905		Mercury	1.734 0.012
ZID plume dist., feet		lbs/day-->ug/L Qeo15.23946		Nickel	1965.305 218.2629
MZ plume dist., feet		lbs/day-->ug/L Qef15.23946		Zinc	158.9914 145.1833
HHnc plume dist., feet		diss-->tot 1=y0=n 1		Site Specific Multiplier Values:	
HHc plume dist., feet		Cu diss-->tot1=y0=n 1		CV = ---	
		cfs-->MGD 0.6463		N = ---	
Fischer/site specific dilutions:		Receiving Stream:		WLAA --> LTAA ---	
F/specific ZID Dilution = ---		Default Hardness= 25		WLAc --> LTAc ---	
F/specific MZ Dilution = ---		Default TSS= 10		LTA a,c-->WQBL avg ---	
F/specific HHnc Dilution= ---		99 Crit., 1=y, 0=n 1		LTA a,c-->WQBL max ---	
F/specific HHc Dilution= ---		LTA h --> WQBL max ---		LTA h --> WQBL max ---	

[\*1] Critical flow and harmonic mean have been divided between Shintech, Plaquemine Plant (LA0120529, AI126578) and Georgia Gulf (LA0007129, AI2455) on a flow weighted basis.

Appendix B-2  
Georgia Gulf Chemicals & Vinyls, LLC  
LA0007129, AI2455

Page 2

(*1) Toxic Parameters	(*2) Instream Conc. ug/L	(*3) CuEffluent lbs/day	(*4) Effluent /Tech (Avg)	(*5) MQLEffluent ug/L	(*6) 95th % 0=95 %	(*7) estimate Non-Tech lbs/day	(*8) Numerical Criteria FW ug/L	(*9) Acute FW ug/L	(*10) Chronic FW ug/L	(*11) HH Carcinogen Indicator "C"
<b>NONCONVENTIONAL</b>										
Total Phenols (4AAP)	---	---		5			700	350	5	
3-Chlorophenol	---	---		10					0.1	
4-Chlorophenol	---	---		10			383	192	0.1	
2,3-Dichlorophenol	---	---		10					0.04	
2,5-Dichlorophenol	---	---		10					0.5	
2,6-Dichlorophenol	---	---		10					0.2	
3,4-Dichlorophenol	---	---		10					0.3	
2,4-Dichlorophenoxy-acetic acid (2,4-D)	---	---	---					100		
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP, Silvex)	---	---	---						10	
<b>METALS AND CYANIDE</b>										
Total Arsenic	1.88	---		10	0	4.0044 787.8216 347.7729 115.9243				
Total Cadmium	0.21	---		1	0	0.4473 167.4856 4.750219 34.59061				
Chromium III	---	---		10		4046.109 1312.516 268.3138				
Chromium VI	---	---		10		15.712 10.582 50				C
Total Copper	15.8504	38.502		10	1	99.63921 64.20342 3751.785				
Total Lead	6.4704	15.9064		5	1	679.8606 26.49319 345.931				
Total Mercury	---	---		0.2	.	4.711854 0.032608 5.434664				
Total Nickel	13.0452	33.3912		40	1	6779.354 752.9016				
Total Zinc	1.91	4.75		20	1	769.7612 702.9087 24207.63				
Total Cyanide	---	---		20		45.9 5.2 663.8				
<b>DIOXIN</b>										
2,3,7,8 TCDD; dioxin	---	---	1.0E-005				7.1E-007			C
<b>VOLATILE COMPOUNDS</b>										
Benzene	1.130341	3.084135		10	1	2249 1125 1.1				C
Bromoform	---	---		10		2930 1465 3.9				C
Bromodichloromethane	---	---		10					0.2	C
Carbon Tetrachloride	2.170019	5.718543		10	1	2730 1365 0.22				C
Chloroform	1.756625	5.008416		10	1	2890 1445 5.3				C
Dibromochloromethane	---	---		10					0.39	C
1,2-Dichloroethane	3.144181	9.975552		10	1	11800 5900 0.36				C
1,1-Dichloroethylene	0.451243	1.068379		10	1	1160 580 0.05				C
1,3-Dichloropropylene	3.031419	11.64048		10	1	606 303 9.86				
Ethylbenzene	2.291931	6.3281		10	1	3200 1600 2390				
Methyl Chloride	2.308465	5.837023		50	1	55000 27500				
Methylene Chloride	0.858726	3.185269		20	1	19300 9650 4.4				C
1,1,2,2-Tetrachloroethane	---	---		10		932 466 0.16				C

Appendix B-2  
Georgia Gulf Chemicals & Vinyls, LLC  
LA0007129, AI2455

Page 3

(*1) Toxic Parameters	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22) (*23)
	WLAA	WLAC	WLAH	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL Need
	Acute	Chronic	HHDW	Acute	Chronic	HHDW	A,C,HH	Avg	Max	Avg	MaxWQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day
<b>NONCONVENTIONAL</b>											
Total Phenols (4AAP)	131783.5	655767.5	28094.32	42170.72	347556.8	28094.32	28094.32	28094.32	66864.49	1843.525	4387.589
3-Chlorophenol	---	---	561.8865	---	---	561.8865	561.8865	561.8865	1337.29	36.8705	87.75178
4-Chlorophenol	72104.41	359735.3	561.8865	23073.41	190659.7	561.8865	561.8865	561.8865	1337.29	36.8705	87.75178
2,3-Dichlorophenol	---	---	224.7546	---	---	224.7546	224.7546	224.7546	534.9159	14.7482	35.10071
2,5-Dichlorophenol	---	---	2809.432	---	---	2809.432	2809.432	2809.432	6686.449	184.3525	438.7589
2,6-Dichlorophenol	---	---	1123.773	---	---	1123.773	1123.773	1123.773	2674.58	73.74099	175.5036
3,4-Dichlorophenol	---	---	1685.659	---	---	1685.659	1685.659	1685.659	4011.869	110.6115	263.2553
2,4-Dichlorophenoxy-acetic acid (2,4-D)	---	---	561886.5	---	---	561886.5	561886.5	561886.5	1337290	36870.5	87751.78
2-(2,4,5-Trichlorophenoxy) propionic acid (2,4,5-TP, Silvex)	---	---	56188.65	---	---	56188.65	56188.65	56188.65	133729	3687.05	8775.178
<b>METALS AND CYANIDE</b>											
Total Arsenic	148317	651594.9	651363	47461.44	345345.3	651363	47461.44	62174.49	147605.1	4079.835	9685.715
Total Cadmium	31531.2	8900.113	194360	10089.99	4717.06	194360	4717.06	6179.349	14670.06	405.4834	962.6362
Chromium III	761729.1	2459158	1507619	243753.3	1303354	1507619	243753.3	319316.9	758072.8	20953.29	49744.07
Chromium VI	2957.975	19826.66	717837	946.552	10508.13	717837	946.552	1239.983	2943.777	81.3666	193.168
Total Copper	18758.29	120292.9	2.1E+007	6002.654	63755.25	2.1E+007	6002.654	7863.476	18668.25	515.9944	1224.994
Total Lead	127992	49638.21	1943740	40957.44	26308.25	1943740	26308.25	34463.81	81818.66	2261.485	5368.869
Total Mercury	* 687.0637	61.09502	30536.64	283.8604	32.38036	30536.64	32.38036	42.41827	100.7029	2.78345	6.608037
Total Nickel	1276296	1410653	---	408414.6	747645.9	---	408414.6	535023.2	1270170	35107.75	83347.41
Total Zinc	144916.9	1316985	1.4E+008	46373.41	698002	1.4E+008	46373.41	60749.16	144221.3	3986.307	9463.674
Total Cyanide	8641.233	9742.832	3729802	2765.195	5163.701	3729802	2765.195	3622.405	8599.755	237.699	564.3084
<b>DIOXIN</b>											
2,3,7,8 TCDD; dioxin	---	---	0.010193	---	---	0.010193	0.010193	0.010193	0.02426	0.000669	0.001592
<b>VOLATILE COMPOUNDS</b>											
Benzene	423401.6	2107824	15792.41	135488.5	1117147	15792.41	15792.41	15792.41	37585.95	1036.284	2466.357
Bromoform	551608.1	2744856	55991.29	176514.6	1454773	55991.29	55991.29	55991.29	133259.3	3674.099	8744.356
Bromodichloromethane	---	---	2871.348	---	---	2871.348	2871.348	2871.348	6833.809	188.4153	448.4285
Carbon Tetrachloride	513955.7	2557493	3158.483	164465.8	1355472	3158.483	3158.483	3158.483	7517.189	207.2569	493.2714
Chloroform	544077.6	2707383	76090.73	174104.8	1434913	76090.73	76090.73	76090.73	181095.9	4993.006	11883.36
Dibromochloromethane	---	---	5599.129	---	---	5599.129	5599.129	5599.129	13325.93	367.4099	874.4356
1,2-Dichloroethane	2221493	1.1E+007	5168.427	710877.9	5858815	5168.427	5168.427	5168.427	12300.86	339.1476	807.1713
1,1-Dichloroethylene	218384.1	1086701	717.837	69882.91	575951.3	717.837	717.837	717.837	1708.452	47.10383	112.1071
1,3-Dichloropropylene	114086.9	567707.3	55402.01	36507.8	300884.9	55402.01	36507.8	47825.21	113539.2	3138.248	7450.346
Ethylbenzene	602438.9	2997794	1.3E+007	192780.4	1588831	1.3E+007	192780.4	252542.4	599547.2	16571.61	39341.76
Methyl Chloride	1E+007	5.2E+007	---	3313414	2.7E+007	---	3313414	4340572	1E+007	284824.5	676186.5
Methylene Chloride	3633460	1.8E+007	63169.66	1162707	9582637	63169.66	63169.66	63169.66	150343.8	4145.137	9865.427
1,1,2,2-Tetrachloroethane	175460.3	873107.6	2297.079	56147.31	462747.1	2297.079	2297.079	2297.079	5467.047	150.7323	358.7428

Appendix B-2  
Georgia Gulf Chemicals & Vinyls, LLC  
LA0007129, AI2455

Page 4

Appendix B-2  
Georgia Gulf Chemicals & Vinyls, LLC  
LA0007129, AI2455

Page 5

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22) (*23)
Toxic	WLAA	WLAC	WLAH	LTAa	LTAc	LTAh	Limiting	WQBL	WQBL	WQBL	WQBL Need
Parameters	Acute	Chronic	HHDW	Acute	Chronic	HHDW	A,C,HH	Avg	Max	Avg	MaxWQBL?
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	002	002	002	002
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	lbs/day

Tetrachloroethylene	242858.2	1208486	9331.881	77714.62	640497.5	9331.881	9331.881	9331.881	22209.88	612.3498	1457.393	no
Toluene	239092.9	1189750	3.4E+007	76509.74	630567.3	3.4E+007	76509.74	100227.8	237945.3	6576.857	15613.76	no
1,1,1-Trichloroethane	994024.2	4946361	1123773	318087.7	2621571	1123773	318087.7	416694.9	989252.9	27343.16	64913.9	no
1,1,2-Trichloroethane	338871.9	1686259	8039.775	108439	893717.5	8039.775	8039.775	8039.775	19134.66	527.5629	1255.6	no
Trichloroethylene	734222.4	3653562	40198.87	234951.2	1936388	40198.87	40198.87	40198.87	95673.32	2637.815	6277.999	no
Vinyl Chloride	---	---	27277.81	---	---	27277.81	27277.81	27277.81	64921.18	1789.946	4260.071	no

## ACID COMPOUNDS

2-Chlorophenol 48571.64 241697.2 561.8865 15542.92 128099.5 561.8865 561.8865 1337.29 36.8705 87.75178 no  
 2,4-Dichlorophenol 38028.96 189235.8 1685.659 12169.27 100295 1685.659 1685.659 1685.659 4011.869 110.6115 263.2553 no

## BASE NEUTRAL COMPOUNDS

Benzidine	47065.54	234202.7	1.148539	15060.97	124127.4	1.148539	1.148539	2.733523	0.075366	0.179371	no	
Hexachlorobenzene	---	---	3.589185	---	---	3.589185	3.589185	3.589185	8.542261	0.235519	0.560536	yes
Hexachlorabutadiene	960.137	1911.094	1292.107	307.2438	1012.88	1292.107	307.2438	402.4894	955.5283	26.411	62.70093	no

[\*1] HCB Water Quality Based Limit (WQBL) allocation is 100% to Internal Outfall 202 as this is where HCB would be generated in the process.

## PESTICIDES

Aldrin	564.7865	---	0.57427	180.7317	---	0.57427	0.57427	0.57427	1.366762	0.037683	0.089686	no
Hexachlorocyclohexane (gamma BHC, Lindane)	997.7894	393.4605	1579.241	319.2926	208.5341	1579.241	208.5341	273.1796	648.541	17.92581	42.55669	no
Chlordane	451.8292	8.056573	2.727782	144.5853	4.269984	2.727781	2.727781	2.727781	6.492118	0.178995	0.426007	no
4,4'-DDT	207.0884	1.873622	2.727781	66.26828	0.993019	2.727781	0.993019	1.300855	3.08829	0.085361	0.202651	no
4,4'-DDE	9883.763	19673.03	2.727781	3162.804	10426.7	2.727781	2.727781	2.727781	6.492118	0.178995	0.426007	no
4,4'-DDD	5.647865	11.24173	3.87632	1.807317	5.958117	3.87632	1.807317	2.367585	5.620755	0.155359	0.368829	no
Dieldrin	44.69344	104.3607	0.717837	14.3019	55.31118	0.717837	0.717837	0.717837	1.708452	0.047104	0.112107	no
Endosulfan	41.41767	104.9228	2640.866	13.25366	55.60909	2640.866	13.25366	17.36229	41.21887	1.139298	2.704746	no
Endrin	16.26585	70.26081	1460.905	5.205072	37.23823	1460.905	5.205072	6.818644	16.18777	0.447433	1.062227	no
Heptachlor	97.89632	7.119762	1.004972	31.32682	3.773474	1.004972	1.004972	1.004972	2.391833	0.065945	0.15695	no
Toxaphene	137.4314	0.374724	3.445618	43.97804	0.198604	3.445618	0.198604	0.260171	0.617658	0.017072	0.04053	no

#### Other Parameters:

APPENDIX B-3 LA0007129, AI No. 2455

Documentation and Explanation of Water Quality Screen  
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (\*1) or (\*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: Mississippi River

Critical Flow, Qrc (cfs) [\*1]: 141,955, adjusted flow: 68,391

Harmonic Mean Flow, Qrh (cfs) [\*1]: 366,748, adjusted flow: 174,766

Segment No.: 070301

Receiving Stream Hardness (mg/L): 153

Receiving Stream TSS (mg/L): 32

MZ Stream Factor, Fs: 1/3

Plume distance, Pf: N/A

[\*1] Both the critical flow and the harmonic mean of the Mississippi River have been divided between Georgia Gulf (LA0007129, AI12455) and Shintech Plaquemine (LA0120529, AI126578) on a flow weighted basis. This was done since Shintech and Georgia Gulf have similar waste streams and a relatively short distance between their discharge points.

Effluent Characteristics:

Company: Georgia Gulf Chemicals & Vinyls, LLC

Facility flow, Qe (MGD): 7.868

Effluent Hardness: N/A

Effluent TSS: N/A

Pipe/canal width, Pw: N/A

Permit Number: LA0007129

Variable Definition:

Qrc, critical flow of receiving stream, cfs

Qrh, harmonic mean flow of the receiving stream, cfs

Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D

Pw = Pipe width or canal width in feet

Qe, total facility flow , MGD

Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)

Cu, ambient concentration, ug/L

Cr, numerical criteria from LAC.IX.1113, Table 1

WLA, wasteload allocation

LTA, long term average calculations

WQBL, effluent water quality based limit

ZID, Zone of Initial Dilution in % effluent

MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):

Appendix B-3  
LA0007129, AI No. 2455  
Page 2

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 \times Fs + Qe)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Fs \times Qrc \times 0.6463 \times Cu)}{Qe}$$

Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.8) Pw n^{1/2}}{Pf}$$

$$\text{Critical Dilution} = \frac{(2.38) (Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf}{(2.8) Pw n^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf^{1/2}}{2.38 Pw^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Qe}{(Qrc \times 0.6463 + Qe)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Qrc \times 0.6463 \times Cu)}{Qe}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Qe}{(Qrh \times 0.6463 + Qe)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Orh \times 0.6463 \times Cu)}{Qe}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.8) Pw n^{1/2}}{Pf}$$

$$\text{Critical Dilution} = \frac{(2.38) (Pw^{1/2})}{(Pf)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) Pf^*}{}$$

$$WLA = \frac{(Cr-Cu) Pf^{1/2}*}{}$$

$$(2.8) \quad P_w n^{1/2} \quad 2.38 \quad P_w^{1/2}$$

\* Pf is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting Cu from Cr and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:

$$LTA_a = WLAA \times 0.32$$

$$LTAC = WLAC \times 0.53$$

$$LTA_h = WLAh$$

WQBL Calculations:

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:

$$\text{Daily Maximum} = \text{Min}(LTA_a, LTAC) \times 3.11$$

$$\text{Monthly Average} = \text{Min}(LTAc, LTAC) \times 1.31$$

If human health LTA is more limiting:

$$\text{Daily Maximum} = LTA_h \times 2.38$$

$$\text{Monthly Average} = LTA_h$$

Mass Balance Formulas:

$$\text{mass (lbs/day)} : (\text{ug/L}) \times 1/1000 \times (\text{flow, MGD}) \times 8.34 = \text{lbs/day}$$

$$\text{concentration(ug/L)} : \frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$$

The following is an explanation of the references in the spreadsheet.

- (\*) Parameter being screened.
- (\*) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (\*) Monthly average effluent or technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (\*) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for

Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.

- (\*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (\*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (\*18) - (\*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (\*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

Metal	Multiplier
Copper	$1 + (10^{4.86} \times TSS^{-0.72} \times TSS) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times TSS^{-0.85} \times TSS) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times TSS^{-0.52} \times TSS) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (\*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

Metal	Formula
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.8545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (\*8), acute numerical criteria for aquatic life protection.

- (\*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (\*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (\*12) Wasteload Allocation for acute aquatic criteria (WLAA). Dilution type WLAA is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAA formulas for streams:

$$WLAA = (\text{Cr}/\text{Dilution Factor}) - \frac{(\text{FS} \times \text{Orc} \times 0.6463 \times \text{Cu})}{Qe}$$

Dilution WLAA formulas for static water bodies:

$$WLAA = (Cr-Cu)/Dilution Factor$$

Cr represents aquatic acute numerical criteria from column (\*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*13) Wasteload Allocation for chronic aquatic criteria (WLAC). Dilution type WLAC is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L.

Dilution WLAC formula:

$$WLAC = (Cr/Dilution Factor) - \frac{(Fs \times Orc \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAC formulas for static water bodies:

$$WLAC = (Cr-Cu)/Dilution Factor$$

Cr represents aquatic chronic numerical criteria from column (\*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr/Dilution Factor) - \frac{(Fs \times Orc.Orh \times 0.6463 \times Cu)}{Qe}$$

Dilution WLAh formulas for static water bodies:

$$WLAh = (Cr-Cu)/Dilution Factor$$

Cr represents human health numerical criteria from column (\*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*15) Long Term Average for aquatic numerical criteria (LTAA). WLAA numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. WLAA X 0.32 = LTAA.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*16) Long Term Average for chronic numerical criteria (LTAC). WLAC numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. WLAC X 0.53 = LTAC.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting

Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. WLAc X 1 = LTAh.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (\*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.
- (\*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ( $LTA_{limiting\ aquatic} \times 1.31 = WQBL_{monthly\ average}$ ). If human health criteria was the most limiting criteria then  $LTAh = WQBL_{monthly\ average}$ . If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*20) End of pipe Water Quality Based Limit (WQBL) daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ( $LTA_{limiting\ aquatic} \times 3.11 = WQBL_{daily\ max}$ ). If human health criteria was the most limiting criteria then  $LTAh$  is multiplied by 2.38 to determine the daily maximum WQBL ( $LTA_{limiting\ aquatic} \times 2.38 = WQBL_{daily\ max}$ ). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.
- (\*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.
- (\*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.
- (\*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

## **Appendix C**

PLEASE PRINT OR TYPE IN THE UNSHADDED AREA ONLY. You may report some or all of this information on separate sheets.  
use the same format instead of completing these pages.

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 1 of Form 2-C)

CART A. You must provide the results of all effluent analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT		3. UNITS				4. INTAKE (continued)	
	(1) CONCENTRATION	(2) MASS CONCENTRATION	(3) CONCENTRATION	(4) NO. OF ANALYSES	(5) CONCENTRATION	(6) MASS CONCENTRATION	(7) CONCENTRATION	(8) NO. OF ANALYSES
a. Biochemical Oxygen Demand (BOD)	10	417	NA	NA	NA	NA	NA	1
b. Chemical Oxygen Demand (COD)	81	3,377.7	NA	NA	NA	NA	NA	1
c. Total Organic Carbon (TOC) (1)	32.5	1,255.3	80.9*	NA	NA	NA	NA	1
d. Total Suspended Solids (TSS)	66	2,752.2	NA	NA	NA	NA	NA	1
e. Ammonia (as N)	1.2	50.0	NA	NA	NA	NA	NA	1
f. Flow	VALES	11,820	VALUE	7,610	VALUE	5,296	102.4	MED
g. Temperature (winter)	VALUE	33.3	VALUE	30.2	VALUE	27.3	2.79	* C VALUE
h. Temperature (summer)	INTENSI	41.1	MAXIMUM	NA	MAXIMUM	35.9	27.6	- C VALUE
i. PH	6.09	10.60	6.93	9.61	NA	10.13	STANDARD UNITS	
Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a, you must provide quantifiable data or an estimate of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.								
1. POLLUTANT AND CAS NO (if available)	2. MARK X	3. EFFLUENT	4. UNITS	5. INTAKE (continued)	6. INTAKE (continued)	7. INTAKE (continued)	8. INTAKE (continued)	9. INTAKE (continued)
a. Benzene	X	(1) RELEASER PRESENT	(2) MAXIMUM DAILY VALUE	(3) CONCENTRATION	(4) NO. OF ANALYSES	(5) CONCENTRATION	(6) NO. OF ANALYSES	(7) CONCENTRATION
b. Chlorine,	X	<20	<874.0	NA	NA	NA	1	mg/L
c. Total Residual	X	<0.1	<41.7	NA	NA	>0.06	<2.29	2
d. Color, True	X	NA	NA	NA	NA	NA	NA	mg/L
e. Cadmium	X	182	NA	NA	NA	NA	1	CFU/mil
f. Fluoride	X	<10	<17.0	NA	NA	NA	NA	mg/L
g. Nitrite (as N)	X	4.5	187.7	NA	NA	NA	NA	mg/L
h. Nitrogen, Total	X	1.6	66.7	NA	NA	NA	1	mg/L
i. Oil and Grease	X	8.1	422.6	<6.2	<111.5	<4.7	<204.8	1.8
j. Palmitic Acid	X	3.35	139.7	NA	NA	NA	1	mg/L
(1) Present due to natural background and man-made.								
(2) Total	X	NA	NA	NA	NA	NA	NA	mg/L
(2) Beta,	X	NA	NA	NA	NA	NA	NA	mg/L
Total	X	NA	NA	NA	NA	NA	NA	mg/L
(2) Radium,	X	NA	NA	NA	NA	NA	NA	mg/L
Total	X	0.0000.96	NA	NA	NA	NA	1	mg/L

Computer Generated EPA Form 3100-1C (Rev. 7-85)

PAGE V.1

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1. POLLUTANT AND CAS NO. (if available)	2. MARK X	3. EFFLUENT			4. UNITS			5. INTAKE (continued)			
		4. TEST- ING FE- QUENCIES	5. RE- LIVED PRESENT	6. MAXIMUM DAILY VALUE		7. MAXIMUM DAILY VALUE		8. LONG TERM AVERAGE (or average)		9. CON- CENTRATION	
				(1) CON- CENTRATION	(2) MASS CENTRATION	(1) CON- CENTRATION	(2) MASS CENTRATION	(1) CON- CENTRATION	(2) MASS CENTRATION	(1) CON- CENTRATION	(2) MASS CENTRATION
1. ANILINIC CYANIDE AND TOTAL PHENOLS	X	X	X	<0.06	<2.5	NA	NA	NA	NA	mg/l.	mg/l.
1. Aniline, Total	X	X	X	0.045	1.88	NA	NA	NA	NA	mg/l.	mg/l.
1. Aniline, Total (and -1-1-1)	X	X	X	<0.005	<0.21	NA	NA	NA	NA	mg/l.	mg/l.
1. Benzene, Total	X	X	X	<0.005	<0.21	NA	NA	NA	NA	mg/l.	mg/l.
1. Cadmium, Total	X	X	X	<0.01	<0.42	NA	NA	NA	NA	mg/l.	mg/l.
1. Copper, Total	X	X	X	0.014	1.42	NA	NA	NA	NA	mg/l.	mg/l.
1. Lead Total	X	X	X	<0.015	<0.63	NA	NA	NA	NA	mg/l.	mg/l.
1. Zinc Total	X	X	X	<0.015	<0.63	NA	NA	NA	NA	mg/l.	mg/l.

11) Processes due to the environment

Computer Generated EPA Form: 1110-3C (Rev 2-15)

ITEM 1A (CONTINUED)		2 MARK X		3 EFFLUENT		4 UNITS		5 INTAKE (from table)	
1 POLLUTANT AND CAS NO (if available)	3 TEST- ING PER- IODS	4 BE- LIEVED PRESENT	5 MAJOR AND DAILY VALUE (Concensed)	6. MAXIMUM DAILY VALUE (Concensed)	7. MAXIMUM DAILY VALUE (Concensed)	8 CON- CENTRATION (1) MASS CENTRATION (2) MASS CENTRATION	9 CON- CENTRATION (1) MASS CENTRATION (2) MASS CENTRATION	10 LONG TERM AVERAGE VALUE (1) CON- CENTRATION (2) MASS CENTRATION	11 CON- CENTRATION (1) MASS CENTRATION (2) MASS CENTRATION
MI Mercury, Total (123.937.6)	X	X	<0.002	<0.008	NA	NA	NA	NA	NA
Mt Nickel, Total (140.020)	X	X	<0.04	<1.67	NA	NA	NA	NA	NA
TON Selenium, Total (78.249.2)	X	X	<0.04	<1.67	NA	NA	NA	NA	NA
114 Silver, Total (140.7.4)	X	X	<0.01	<0.12	NA	NA	NA	NA	NA
12M Thallium, Total (140.9.0)	X	X	<0.02	<0.81	NA	NA	NA	NA	NA
13M Zinc, Total (72.46.6)	X	X	0.016	1.5	NA	NA	NA	NA	NA
14N Cadmium, Total (57.17.5)	X	X	<0.02	<0.11	NA	NA	NA	NA	NA
15N Phenols, Total Benzene, Recoverable DIOXIN 2,7,3,7,4-Tetachloro- dibenzofuran (174.01.6)	X	X	<0.005	<0.21	NA	NA	NA	NA	NA
GENIC FRACTION VOLATILE COMPOUNDS									
IV Acetoin (107.0.2.8)	X	X	<50	<2.0R	NA	NA	NA	1	ug/L
V Acetoinamide (107.1.1)	X	X	<50	<2.0R	NA	NA	NA	1	ug/L
IV Benzene (71.1.2)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
SV Bromoform (75.23.2)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV Carbon Tetrachloride (56.24.5)	X	X	<10	<0.42	NA	NA	<10	NA	NA
IV Chlorbenzene (106.92.2)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV Chlorodifluoromethane (124.85.1)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV Chloroethane (75.09.1)	X	X	<50	<2.0R	NA	NA	NA	1	ug/L
IV 1-Chlorobutyl- silyl Ether (1.07.1.a)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV Chloroform (57.66.1)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV Dichloromethane (75.27.4)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV 1,1-Dichloro- ethane (75.34.3)	X	X	<10	<0.42	NA	NA	NA	1	ug/L
IV 1,2-Dichloro- ethane (107.06.2)	X	X	<10	<0.42	NA	NA	<10	NA	NA
IV 1,1-Dichloro- ethylene (75.35.4)	X	X	<10	<0.42	NA	NA	<10	NA	NA
IV 1,2-Dichloro- methane (75.17.3)	X	X	<10	<0.42	NA	NA	<10	NA	NA
IV 1,1-Dichloro- propane (54.73.6)	X	X	<10	<0.42	NA	NA	<10	NA	NA
IV Ethylbenzene (100.41.4)	X	X	<10	<0.42	NA	NA	NA	1	ug/L

## ITEM 1C, CONTINUED

1. A0007129

OUT:

1. POLLUTANT AND CAS NO. (if available)	2. MARK X	3. MAXIMUM DAILY VALUE				4. MAXIMUM DAILY VALUE OF ANALYSES				5. INTAKE (continued)			
		a. TEST- INCRE- QUED	b. RE- LIVED PRESENT	c. BE- LEVED AGENT	d. CON- CENTRATION	e. CON- CENTRATION	f. MASS CENTRATION	g. NO OF ANALYSES	h. CON- CENTRATION	i. MASS CENTRATION	j. CON- CENTRATION	k. IN- TERP OF ANALYSES	
30V. Methyl Resin (74:33:2)	X	N	<10	<1.0	<1.0	NA	NA	NA	NA	1	ug/L	Today	
31V. Methyl Chloride (75:09:2)	X	N	<10	<1.0	<1.0	NA	NA	NA	NA	1	ug/L	Today	
32V. Methylene Chloride (75:34:3)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
33V. Toluene chloroform (12:7:18:4)	X	N	<10	<1.0	<1.0	NA	NA	NA	NA	1	ug/L	Today	
34V. Toluene (108:88:1)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
35V. 1,2-Tri-n- butylbenzene (136:68:3)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
36V. 1,1,1-Trichloro- ethane (71:55:6)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
37V. 1,1,2-Tribromo- ethane (75:05:5)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
38V. Trichloro- ethylene (70:01:6)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
39V. Trichlorofluoro- methane (73:67:4)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
40V. Vinyl Chloride (73:82:4)	X	N	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
C/OMS FRACTION - ACID COMPOUNDS													
41A. 2-Chlorophenol (53:57:8)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
42A. 2,4-Dichloro- phenol (120:83:2)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
43A. 2,4-Dimethyl- benzeno (105:67:2)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
44A. 4-Ethoxymethoxy- benzene (53:63:1)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
45A. 2,4-Dinitro- benzeno (51:28:5)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
46A. 2-Nitropropano (108:71:5)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
47A. 4-Nitrophenoxy- benzene (100:02:7)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
48A. 1-Chloro-4- methylbenzene (51:30:2)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
49A. Phenochloro- benzene (97:56:5)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
50A. Phenol (108:95:2)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
51A. 2,4,6-Tribromo- phenol (106:02:2)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
C/OMS FRACTION - BASE/NEUTRAL COMPOUNDS													
52B. Acetophenone (107:12:9)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
53B. Acenaphthylene (205:96:3)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
54B. Anthracene (120:13:7)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
55B. Benzene (123:75:5)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
56B. Benzo(a)anthracene (126:55:3)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	
57B. Benzo(a)pyrene (120:52:8)	X	X	<10	<0.42	<0.42	NA	NA	NA	NA	1	ug/L	Today	

ITEM NO. (CONTINUED)

LA0007120

002

1. POLLUTANT AND CAS NO (if available)	2. MARK X		3. EFFLUENT		4. UNITS		5. INTAKE (intake)	
	a. TEST- INGRE- DIENT QUANTITY	b. RE- LEAS- ED PREDICTED AMOUNT	c. MAXIMUM DAILY VALUE (1) CONC. CENTRATION (2) MASS CONCENTRATION	d. MAXIMUM DAILY VALUE (1) CONC. CENTRATION (2) MASS CONCENTRATION	e. CONC. CENTRATION (1) CONC. CENTRATION (2) MASS CONCENTRATION	f. CONC. CENTRATION (1) CONC. CENTRATION (2) MASS CONCENTRATION	g. INAKE VALVE (1) CONC. CENTRATION (2) MASS CONCENTRATION	h. INAKE VALVE (1) CONC. CENTRATION (2) MASS CONCENTRATION
160. Benzene, methylene (205-09-2)	X	X	<10	<0.42	NA	NA	1	ug/L
161. Benzofluorene	X	X	<20	<0.81	NA	NA	1	ug/L
162. Benzofluorophenone	X	X	<10	<0.42	NA	NA	1	ug/L
163. Benzofuran	X	X	<10	<0.42	NA	NA	1	ug/L
164. Benzyl Chloride	X	X	<10	<0.42	NA	NA	1	ug/L
165. Benzyl Methane	X	X	<10	<0.42	NA	NA	1	ug/L
166. Bis(2-Alkyl- ethyl) Ether (111-63-3)	X	X	<10	<0.42	NA	NA	1	ug/L
167. Bis(2-Chloro- methyl) Ether (102-56-1)	X	X	<10	<0.42	NA	NA	1	ug/L
168. Bis(2-Ethoxyethyl)- Phthalate (117-81-7)	X	X	<10	<0.42	NA	NA	1	ug/L
169. 4-Bromophenyl								
170. Ethyl Ether (101-53-3)	X	X	<10	<0.42	NA	NA	1	ug/L
171. Ethyl Benzyl Phthalate (93-68-7)	X	X	<10	<0.42	NA	NA	1	ug/L
172. 2-Chloromethylbenzene	X	X	<10	<0.42	NA	NA	1	ug/L
173. 1,8-Di-								
174. 4-Chlorophenol								
175. Ethanol Ether (7705-75-3)	X	X	<10	<0.42	NA	NA	1	ug/L
176. Phenol								
177. Phenol, 2-Chloro-								
178. 1,3-Ol,3-								
179. Toluene (n-h)								
180. Anthracene (131-70-3)	X	X	<20	<0.81	NA	NA	1	ug/L
181. 1,2-Dichloro- hexafluoropropane (55-59-1)	X	X	<10	<0.42	NA	NA	1	ug/L
182. 1,1-Dichloro- hexafluoropropane (54-13-1)	X	X	<10	<0.42	NA	NA	1	ug/L
183. 1,4-Dichloro- hexafluoropropane (186-36-2)	X	X	<10	<0.42	NA	NA	1	ug/L
184. 1,2-Dichloro- hexafluoropropane (91-24-1)	X	X	<10	<0.42	NA	NA	1	ug/L
185. Dichloro Phthalate	X	X	<10	<0.42	NA	NA	1	ug/L
186. Dimethyl Phthalate								
187. Dimethyl Phthalate (111-11-1)	X	X	<10	<0.42	NA	NA	1	ug/L
188. Di-n-Butyl								
189. Di-n-Butyl Phthalate								
190. Dimethyl Phthalate (111-11-1)	X	X	<10	<0.42	NA	NA	1	ug/L
191. Di-n-Butyl								
192. Di-n-Butyl Phthalate								
193. 2,4-Dimethoxy- phenazine (2a: Anthracene)	X	X	<20	<0.81	NA	NA	1	ug/L
194. Di-n-Octyl								
195. Di-n-Octyl Phthalate								
196. 1,2-Diphenyl-								
197. Diphenylbenzene								
198. Diphenylbenzene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
199. Diphenylbenzene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
200. Diphenylbenzene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
201. Fluoranthene (206-44-0)	X	X	<10	<0.42	NA	NA	1	ug/L
202. Fluorine								
203. Fluorine								
204. Hexachlorobutene								
205. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
206. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
207. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
208. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
209. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
210. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
211. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
212. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
213. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
214. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
215. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
216. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
217. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
218. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
219. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
220. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
221. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
222. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
223. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
224. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
225. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
226. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
227. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
228. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
229. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
230. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
231. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
232. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
233. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
234. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
235. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
236. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
237. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
238. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
239. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
240. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
241. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
242. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
243. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
244. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
245. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
246. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
247. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
248. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
249. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
250. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
251. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
252. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
253. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
254. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
255. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
256. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
257. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
258. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
259. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
260. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
261. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
262. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
263. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
264. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
265. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
266. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
267. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
268. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
269. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
270. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
271. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
272. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
273. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
274. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
275. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
276. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
277. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
278. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
279. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
280. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
281. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
282. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
283. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
284. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
285. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
286. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
287. Hexachlorobutene (113-74-1)	X	X	<10	<0.42	NA	NA	1	ug/L
288. Hexachlorobutene (								

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1. POLLUTANT AND CAS NO <i>(if available)</i>		2. MARK X		3. EFFLUENT		4. UNITS		5. INTAKE (continued)	
* TEST- SPECIES	* RE- LIVED PRESENT	* RE- LIVED	* RE- LIVED PRESENT	* MAXIMUM DAILY VALUE <i>(Dose/kg/day)</i>	* MANDATORY VALUE <i>(Dose/kg/day)</i>	* 100% TEST AND VALUE <i>(Dose/kg/day)</i>	* 100% TEST AND VALUE <i>(Dose/kg/day)</i>	* LONG TERM AVERAGE VALUE <i>(Dose/kg/day)</i>	* LONG TERM AVERAGE VALUE <i>(Dose/kg/day)</i>
(1) FCB-1242 (11469-21-2)	X	X	X	(2) MASS CONCENTRATION	(2) MASS CONCENTRATION	(3) MASS CONCENTRATION	(3) MASS CONCENTRATION	(4) MASS CONCENTRATION	(4) MASS CONCENTRATION
(1997-11-1254 (11292-0-3))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
(201-17C-1721 (11103-28-2))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
(117-17C-1232 (11141-16-5))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
(228-17C-1248 (12672-29-6))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
(237-17C-0-1260 (11096-32-5))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
(245-17C-1016 (12674-11-2))	X	X	X	<1.0	<0.042	NA	NA	NA	NA
351. Tetraphene (3091-31-2))	X	X	X	<5.0	<0.309	NA	NA	NA	NA
<b>OTHER PARAMETERS</b>									
Total Solids	X			11,300	530,440	NA	NA	NA	NA
Hg, Chromium	X			0.094	3.92	NA	NA	NA	mg/L
Chloride	X			7,996	295,653	NA	NA	NA	mg/L
Total Dissolved Solids	X			12,693	534,881	NA	NA	NA	mg/L
Total Nitrofied Nitrogen	X			2.8	116.6	NA	NA	NA	mg/L

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PAGE V.7

PLEASE PRINT OR TYPE IN THE UNSHADED AREA ONLY. You may report some or all of the information on separate sheets  
using the same form instead of completing these pages.

## USE DUPLICATES

V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

## F. AMOUNTS

V-10. POLLUTANT Inventory Form 1 (or Form 1)									
INTAKE AND EFFLUENT CHARACTERISTICS									
PART A. You must include the results of federal analysis for every pollutant in this table. Complete one table for each pollutant. See instructions for additional details.									
2. EFFLUENT									
* MAXIMUM DAILY VALUE		* MAXIMUM DAILY VALUE		* LONG TERM AVERAGE VALUE (if averaging)		* LONG TERM AVERAGE VALUE (if averaging)		* INTAKE (continued)	
1. POLLUTANT (if multiple)	(1) CON- CENTRATION	(2) MASS CENTRATION	(3) MASS CENTRATION	(4) NO OF ANALYSES	(5) CON- CENTRATION	(6) MASS CENTRATION	(7) CON- CENTRATION	(8) MASS CENTRATION	(9) MASS CENTRATION
a. Biochemical Oxygen Demand (BOD)	28	117.5	NA	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
b. Chemical Oxygen Demand (COD)	2,112	23,177.7	6,194	3,060.2	418.1	2,714.3	431	$\text{mg/L}$	Instantaneous
c. Total Organic Carbon (TOC)	12	50.3	NA	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
d. Total Suspended Solids (TSS)	1,201	4,515.2	258	1,072.2	126.4	1,27.4	147	$\text{mg/L}$	Instantaneous
e. Ammonia (as N)	0.2	0.84	NA	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
f. TDS	Value	5,159	Value	1,535	Value	0.226	1014	MG/L	Instantaneous
g. Temperature (winter)	Value	18	Value	NA	Value	NA	1	°C	Value
h. Temperature (summer)	Value	27	Value	NA	Value	NA	1	°C	Value
i. pH	Minimum to 0	Maximum to 14	Minimum to 0	Maximum to 14	NA	NA	1	STANDARD LIMITS	

PART B. Mark "X" in column 2-a for each pollutant you believe is present. Mark "X" in column 2-b for any pollutant which is limited either directly or indirectly but expressly in effluent limitations guidelines. You must provide analyses for that pollutant for other pollutants for which you mark column 2-a. You must provide pollutant data or an explanation of their absence in your discharge. Complete one table for each pollutant. See the instructions for additional details and requirements.

V-10. POLLUTANT Inventory Form 1 (or Form 1)									
2. MARK "X"									
* MAXIMUM DAILY VALUE		* MAXIMUM DAILY VALUE		* LONG TERM AVERAGE VALUE (if averaging)		* LONG TERM AVERAGE VALUE (if averaging)		* INTAKE (continued)	
1. POLLUTANT AND CAS NO. (if multiple)	(2) PRESENT OR ABSENT	(3) CON- CENTRATION	(4) MASS CENTRATION	(5) CON- CENTRATION	(6) MASS CENTRATION	(7) CON- CENTRATION	(8) MASS CENTRATION	(9) CON- CENTRATION	(10) MASS CENTRATION
a. Bromide (20595-67-9)	X	<20	8.89	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
b. Chlorine, Total Residual	X	0.1	4.56 E-8	<13.64	<0.012	<1.82	417	$\text{mg/L}$	Instantaneous
c. Color, True	X	NA	NA	NA	NA	NA	NA	CFU/mm <sup>3</sup>	NA
d. Total California Chlorides (10043-83-8)	X	1	NA	NA	NA	NA	1	CFU/mm <sup>3</sup>	NA
e. Fluoride	X	<10	<41.24	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
f. Nitrate - Nitrite (as N)	X	0.129	0.541	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
g. Inorganic Total Oxygen (as N)	X	<1	<4.192	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
h. Oil and Grease	X	<5.1	<21.39	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
i. Fluorophore (as P), Total (1723-14-0)	X	1.11	4.66	NA	NA	NA	1	$\text{mg/L}$	Instantaneous
j. Polychlorofluorocarbons									
(1) Alpha- Toluene	X	NA	NA	NA	NA	NA	NA	$\mu\text{g/L}$	NA
(2) Beta- Toluene	X	NA	NA	NA	NA	NA	NA	$\mu\text{g/L}$	NA
(3) Toluene	X	NA	NA	NA	NA	NA	NA	$\mu\text{g/L}$	NA
Total	X	1.24 E-07	NA	NA	NA	NA	1	$\mu\text{g/L}$	NA

(1) Summer temperatures from 1997 permit application.

(2) Interstage flow in internal breakwater mediation.

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Reported values are mean values (range)

## ITEM 1A (CONTINUED FROM FRONT)

1. POLLUTANT AND CAS NO. (if available)	2. MARK X		3. EFFLUENT			4. UNITS			< INTAKE (continued)		
	b. RE- LEASED PRESENT	c. RE- LEASED PRESENT	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)	c. LONG TERM AVE VALUE (if available)		d. IN CONC.	e. IN CONC. OF ANALYSES	f. IN CONC.	g. IN CONC.
			(1) CONC.	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION
(4) Cadmium 226, Total	X		0.12±0.45	NA	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
k. Sulfate (as SO <sub>4</sub> ) (1450.79.8)	X		1.450	16,150.8	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
l. Sulfide (as S) (1450.45.2)	X		0.01K	0.064	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
m. Sulfite (as SO <sub>3</sub> ) (1450.50.3)	X		29	117.46	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
n. Surfactants	X		0.5N	2.11	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
o. Aluminaum, Total (1429.90.5)	X		<0.30	<0.130	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
p. Barium, Total (1440.50.3)	X		0.12	0.503	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
q. Boron, Total (2440.32.8)	X		<1	<4.19	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
r. Cobalt, Total (1410.38.4)	X		<0.01	<0.002	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
s. Iron, Total (2410.80.6)	X		0.36	1.51	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
t. Manganese, Total (2410.26.4)	X		1.34	5.62	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
u. Nitrobenzene, Total (1430.98.7)	X		0.05K	0.243	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
v. Mercaptans, Total (1430.06.5)	X		0.06J	0.264	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
w. Tin, Total (2440.31.5)	X		<0.025	<0.015	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
x. Titanium, Total (1410.32.6)	X		<0.10	<0.40	NA	NA	NA	NA	1 mg/L	NA	1 mg/L

If you are a primary industry and this could contain precious metals, refer to Table 2e in the instructions to determine which of the CCAIS fractions you must test for. Mark "X" in column 2a for all such CCAIS fractions that apply to your industry and add totals, evaulates, and total phenols. If you are not required to mark column 2a (secondary industries, nonresidential wastewater outfalls, and nonresidential CCAIS fractions), mark "X" in column 2a for each pollutant for which you believe is a pollutant. If you know or have reason to believe it is not a pollutant, you must mark column 2b for each pollutant you believe is a pollutant. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for each pollutant which you know or have reason to believe is a pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for each pollutant which you know or have reason to believe is not a pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for each pollutant which you know or have reason to believe is a pollutant. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. MARK X		3. EFFLUENT			4. UNITS			5. INTAKE (continued)		
	b. RE- LEASED PRESENT	c. RE- LEASED PRESENT	a. MAXIMUM DAILY VALUE (if available)		b. MAXIMUM 30 DAY VALUE (if available)	c. LONG TERM AVE VALUE (if available)		d. IN CONC.	e. IN CONC. OF ANALYSES	f. IN CONC.	g. IN CONC.
			(1) CONC.	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION	(2) MASS CENTRATION	(1) MASS CENTRATION
metals, cyanide, and total phenols											
1N. Arsenic, Total (1410.36.0)	X	X	<0.06	<1.03	<0.06	<0.54	<0.40	110	1 mg/L	NA	1 mg/L
2M. Arsenic, Total (2440.38.2)	X	X	<0.00	<0.168	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
3N. Barium, Total (1440.41.7)	X	X	<0.005	<0.021	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
4M. Cadmium, Total (1410.31.9)	X	X	<0.005	<0.021	NA	NA	NA	NA	1 mg/L	NA	1 mg/L
5M. Chromium, Total (1410.41.7)	X	X	0.10J	0.9	0.059	0.47	<0.013	111	1 mg/L	NA	1 mg/L
6M. Copper, Total (1410.03.1)	X	X	2.14	1.3	0.64	4.13	0.14	121	1 mg/L	NA	1 mg/L
7M. Lead, Total (1410.92.1)	X	X	<0.044	<0.044	<0.011	<0.043	<0.005	112	1 mg/L	NA	1 mg/L

- (1) Summer temperature from 1995 permit application.  
(2) Freeze date in winter break and mid-term.

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## ITEM V.C. (CONTINUED)

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1. POLLUTANT AND CAS NO. (if applicable)	2. MARK X	3. EFFLUENT						4. UNITS						5. INSTANCE INFORMATION					
		a. MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION)	b. MAXIMUM 30 DAY VALUE (1) CON- CENTRATION (2) MASS CENTRATION)	c. LONG TERM AVERAGE VALUE (1) CON- CENTRATION (2) MASS CENTRATION)	d. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	e. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	f. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	g. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	i. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	j. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	k. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	l. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	m. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)	n. CON- CENTRATION (1) CON- CENTRATION (2) MASS CENTRATION)					
3.M Mercury, Total (7439-97-6)	X	N	<0.002	<0.001	N/A	N/A	N/A	N/A	N/A										
3.M Nickel, Total (7440-02-0)	X	N	0.211	1.42	0.017	<0.50	<0.041	<0.30	142	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
3.M Selenium, Total (7782-47-2)	X	X	<0.04	<0.168	N/A	N/A	N/A	N/A	N/A										
11.M Silver, Total (7440-72-4)	X	X	<0.01	<0.012	N/A	N/A	N/A	N/A	N/A										
12.M Thallium, Total (7440-09-0)	X	X	<0.02	<0.004	N/A	N/A	N/A	N/A	N/A										
13.M Zinc, Total (7440-66-0)	X	N	0.028	0.117	N/A	N/A	N/A	N/A	N/A										
14.M Cyanide, Total (49-12-5)	X	X	<0.02	<0.009	N/A	N/A	N/A	N/A	N/A										
15.M Phenols, Total Phenolics, Recoverable DIOXIN	X	X	0.016	0.067	N/A	N/A	N/A	N/A	N/A										
2,3,7,8-Tetrachloro- dibenzo-p-Dioxin (1176-41-6)	X	X	<10	<4.125x10 <sup>-10</sup>	N/A	N/A	N/A	N/A	N/A										
<i>c-GCNS FRACTION VOLATILE COMPOUNDS</i>																			
14.V Acetone (67-64-1)	X	N	<50	<0.210	N/A	N/A	N/A	µg/L	mg/L										
14.V Acrylonitrile (107-13-1)	X	N	<50	<0.210	N/A	N/A	N/A	µg/L	mg/L										
14.V Benzene (71-43-2)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Bromoform (126-35-2)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Carbon Tetrachloride (56-23-5)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Chlorobenzene (108-90-7)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Chlorotoluene, methylene (124-48-1)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Chloroethane (75-05-1)	X	X	<50	<0.210	N/A	N/A	N/A	µg/L	mg/L										
14.V 2-Chloroethyl- vinyl Ether (10-75-8)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Chloroform (67-66-3)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Dichlorobromo- methane (75-27-4)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V 1,1-Dichloro- ethane (75-34-3)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V 1,2-Dichloro- ethane (107-06-2)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V 1,1-Dichloro- ethene (75-34-4)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V 1,2-Dichloro- ethene (76-85-5)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V 1,1-Dichloro- ethane (54-73-6)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										
14.V Ethylbenzene (110-41-4)	X	X	<10	<0.042	N/A	N/A	N/A	µg/L	mg/L										

(1) Summer temperature from 1997 permit application.  
(2) Present due to natural background conditions.

(3) Computer Generated EPA Form 3510-C (Rev 2-95)

PAGE V-1

CONTINUE ON NEXT PAGE

## WATER CONSTITUENTS

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2. MARK X		3. EFFLUENT		4. UNITS		5. INTAKE information	
1. POLLUTANT AND/Or NOT OF ANALYSIS	% PRE- SENT	% PRE- SENT LIEVED ABSENT PRESENT	% MAXIMUM DAILY VALUE (1) CONC. (2) MASS CONCENTRATION	% MAXIMUM DAILY VALUE (1) CONC. (2) MASS CONCENTRATION	(1) CONC. (2) MASS CONCENTRATION	% MAXIMUM DAILY CONC. CONCENTRATION	% INTRATE VALUE (1) CONC. (2) MASS CONCENTRATION
10N. Methyl Benzyl Ether	X	X	<10	<0.210	NA	NA	NA
21V. Methyl Chloride (74.4.1)	X	X	<10	<0.210	NA	NA	NA
22C. Methylene (73.0.0-2)	X	X	<10	<0.084	NA	NA	NA
23C. 1,1,2,2-Tetra- methylmethane (79.4.4)	X	X	<10	<0.042	NA	NA	NA
24S. Terephthalic Anhydride (122-93-4)	X	X	<10	<0.042	NA	NA	NA
25C. Tolene (108-82-3)	X	X	<10	<0.042	NA	NA	NA
26C. 1,2,2-Trichloro- ethane (156-60-5)	X	X	<10	<0.042	NA	NA	NA
27P. 1,1,1-Trichloro- ethane (71.51.6)	X	X	<10	<0.042	NA	NA	NA
28V. 1,1,2,2-Tetrachloro- ethane (72.91.5)	X	X	<10	<0.042	NA	NA	NA
29C. Trichloro- ethane (79.01.6)	X	X	<10	<0.042	NA	NA	NA
30N. Trichloroethoxy- methane (75.60.4)	X	X	<10	<0.042	NA	NA	NA
31V. Vinyl Chloride (73.01.1)	X	X	<10	<0.042	NA	NA	NA
GC/MS FRACTION - ACID COMPOUNDS							
1A. 2-Chloropropano- (74.57.3)	X	X	<10	<0.042	NA	NA	NA
2A. 2,4-Dichloro- phenol (120-31-2)	X	X	<10	<0.042	NA	NA	NA
3A. 2,4-Dimethyl- phenol (105-62-9)	X	X	<10	<0.042	NA	NA	NA
4A. 4,6-Dinitro-O- Cresol (53-52-1)	X	X	<10	<0.210	NA	NA	NA
5A. 2,4-Dinitro- Phenol (51-29-5)	X	X	<10	<0.210	NA	NA	NA
6A. 2-Nitrophenol (98.73-5)	X	X	<10	<0.084	NA	NA	NA
7A. 4-Isopropenyl- Phenol (110-02-2)	X	X	<10	<0.210	NA	NA	NA
8A. N-Cyanomethyl Cresol (105-56-7)	X	X	<10	<0.042	NA	NA	NA
9A. Pentamethoxy- phenol (67.36.5)	X	X	<10	<0.210	NA	NA	NA
10A. Phenol (108-95-2)	X	X	<10	<0.042	NA	NA	NA
11A. 2,4-Ternary- Phenol (88.06.2)	X	X	<10	<0.042	NA	NA	NA
GC/MS FRACTION - BASENEUTRAL COMPOUNDS							
12A. Acetophenone (101-70-2)	X	X	<10	<0.042	NA	NA	NA
13A. Acetylacetone (123-96-4)	X	X	<10	<0.042	NA	NA	NA
14A. Anthracene (120-12-7)	X	X	<10	<0.042	NA	NA	NA
15A. Biotinolane (72-57-5)	X	X	<50	<0.210	NA	NA	NA
16A. Bromo(Aldopheno- ne) (66-11-1)	X	X	<10	<0.042	NA	NA	NA
17A. Bromo(Aldopheno- ne) (66-12-4)	X	X	<10	<0.042	NA	NA	NA

(1) Summer temperature from 1987 permit application.

(2) Reference due to older test &amp; ground indication.

Computer Generated EPA Form 3510-2C (Rev. 2-8-91)

1. POLLUTANT AND CAS NO. (if applicable)	2. MARK X	3. EFFLUENT			4. DRILLS			5. WASTE (continued)		
		4. TEST, TEST RESULTS PRESENT	5. MAXIMUM ALLOWABLE CONCENTRATION (ppm)	6. MAXIMUM TEST VALUE (ppm)	7. DRAINS		8. CONC. OF ANALYSES	9. CONC. OF ANALYSES	10. CONC. OF ANALYSES	
					11) CONC.	12) MASS CONCENTRATION				
70. 1,4-Benzoether, sulfone (205-95-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
71R. Benzofluorophene (91-51-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
72R. Benzothiophene (111-21-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
73R. Bis(2-chloromethyl)ether (111-44-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
74R. Bis(2-chlorovinyl)methyl Ether (102-62-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
75R. Bis(2-Ethylhexyl)- Dihalide (117-51-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
76R. 4-Bromophenol Chloro-Ether (61-15-3)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
77R. Dicyl Butene Phthalate (83-88-7)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
78R. 2-Chlorophenol (21-58-7)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
79R. 4-Chlorophenol Phenol Ether (700-72-3)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
80R. Chrysene (215-01-9)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
81R. Diisocyanate (4-h) Anilinone (51-70-3)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
82R. 1,2-Dichloro- benzene (93-50-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
83R. 1,3-Dichloro- benzene (54-13-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
84R. 1,4-Dichloro- benzene (106-66-7)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
85R. 1,3-Dichloro- benzene (91-54-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
86R. Diethyl Phthalate (81-66-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
87R. Dimethyl Phthalate (131-11-3)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
88R. D-N,N-Bis(2- Uphthaloate (84-24-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
89R. 2,4-Dinitrobenzene (121-14-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
90R. 2,6-Dinitrobenzene (60-29-2)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
91R. 2,3-Dinitro- Phthalic acid (73-10-0)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
92R. 1,2-Diphenyl- Hydrazine Oxides (Aromatic)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
93R. Fluoranthene (208-44-0)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
94R. Fluorene (201-13-7)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
95R. Hexahydrobenzene (118-71-1)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L
96R. Hexamethylbenzene (187-68-3)	X	X	<10	<0.004	NA	NA	NA	NA	1	μg/L

(1) Summer empirics from 1997 permit regulation.  
(2) Present test in entered hexagross medium.

## WITNESSING

L-A0007129

1 POLLUTANT AND CAS NO. (if available)	2 MARY N	3 EFFLUENT						4 UNITS		5 INSTANCE (continued)		
		b. TEST- ING RE- QUIRED	c. RE- LEASED PRESENT	d. MAXIMUM DATE, VALUE (1) CONC. (2) MASS CENTRATION	e. MAXIMUM DATE, VALUE (1) CONC. (2) MASS CENTRATION	f. LONG TERM AVERAGE VALUE (1) CONC. (2) MASS CENTRATION	g. MAX OF ANALYSIS	h. MASS CENTRATION	i. MASS CENTRATION	j. LONG TERM AVERAGE (1) CONC. (2) MASS	k. SOURCE OF ANALYSIS	
31B Hexachlorocyclo- hexatetraene (7-47-4)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
32B Hexachlorocyclo- hexane (67-72-1)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
33B Indene (1-12-1, red) (57-01-5)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
34B Ethylbenzene (78-01-1)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
35B Propylbenzene (91-20-3)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
36B Phenolbenzene (69-50-3)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
37B 1,1-Dimethyl- cyclohexene (63-16-7)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
38B 1,1-Dimethylcyclohex- ene (26-70-6)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
39B Phenanthrene (110-91-3)	X	X	<50	<0.210	NA	NA	NA	NA	NA	μg/L	Therday	
40B N-Nitroso-1,3- Propanedione (63-16-7)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
41B 1,1-Dimethyl- cyclohexene (26-70-6)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
42B 1,2,4-Trichloro- benzene (120-82-1)	X	X	<10	<0.042	NA	NA	NA	NA	NA	μg/L	Therday	
C/CONS FRACTION - PESTICIDES												
43B Aldrin (120-06-2)	X	X	<0.05	<0.0002	NA	NA	NA	NA	NA	μg/L	Therday	
44B ALTHA-BHC (110-94-6)	X	X	<0.05	<0.0002	NA	NA	NA	NA	NA	μg/L	Therday	
45B BETA-BHC	X	X	<0.05	<0.0002	NA	NA	NA	NA	NA	μg/L	Therday	
46B DELTA-BHC (58-80-2)	X	X	<0.05	<0.0002	NA	NA	NA	NA	NA	μg/L	Therday	
47B CHAMMA-BHC (110-96-8)	X	X	<0.05	<0.0002	NA	NA	NA	NA	NA	μg/L	Therday	
48B Chlordane, Technical (53-73-9)	X	X	<0.25	<0.001	NA	NA	NA	NA	NA	μg/L	Therday	
49B 4,4'-DDT (59-75-1)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
50B 4,4'-DDE (72-55-2)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
51B 4,4'-DDD (72-56-3)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
52B Dieldrin (60-53-1)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
53B Aliphatic Endosulfan I (115-29-2)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
54B Beta-Endosulfan II (115-29-2)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
55B Endosulfan Sulfate (101-07-1)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
56B Endrin (72-20-8)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
57B Endrin Aldehyde (71-71-2)	X	X	<0.1	<0.0004	NA	NA	NA	NA	NA	μg/L	Therday	
58B Heptachlor (76-44-3)	X	X	<0.05	<0.0001	NA	NA	NA	NA	NA	μg/L	Therday	
59B Heptachlor Epoxide (102-37-2)	X	X	<0.05	<0.0001	NA	NA	NA	NA	NA	μg/L	Therday	

- (1) Summer temperature from 1997 permit application.  
(2) Previous date in annual background monitor.

## ITEM V.C CONTINUED

1. POLLUTANT AND CASNO. (if applicable)	2. MARK X			3. EFFLUENT			4. UNITS			5. INTAKE (continued)			
	a. TEST- ING PER- IOD	b. RE- LEASED PRESENT	c. BE- LOWED PRESENT	d. MAXIMUM DAILY VALUE (if applicable)	e. LONG TERM AVG. VALUE (if applicable)	f. CONC. CENTRATION	g. ID OF ANALYSES	h. ID OF CONTRIBUTION	i. ID OF ANALYSES	j. ID OF CONTRIBUTION	k. MASS	l. ID OF ANALYSES	m. ID OF ANALYSES
141. PCB-122 (11765-21-9)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
149. PCB-124 (11767-67-1)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
209. PCB-122 (11764-24-2)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
210. PCB-122 (11761-16-5)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
229. PCB-124N (11767-29-6)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
211. PCB-209 (11766-83-5)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
249. PCB-1016 (11764-11-2)	X	X	<1.0	<0.0042	NA	NA	NA	NA	1	μg/L	Wednesday		
249. Tetrachlore- (8000-13-2)	X	X	<5.0	<0.021	NA	NA	NA	NA	1	μg/L	Wednesday		
OTHER PARAMETERS													
Total Solids													
115.5. Chromium	X			15.800	66.241	NA	NA	NA	1	mg/L	Wednesday		
Chloride		X		0.022	0.09	NA	NA	NA	1	mg/L	Wednesday		
Trend Dissolved Solids		X		38.800	162.617	NA	NA	NA	1	mg/L	Wednesday		
Trend Volatile Nitrogen		X		3.400	14.263	NA	NA	NA	1	mg/L	Wednesday		

(1) Summer temperatures from 1997 permit application.

(2) Presence due to natural background radiation.

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ONE POINT OR TYPE IN THE UNSHADED AREA ONLY You may return some or all of this information on separate sheets over the same form instead of completing three pages

**V. IN LAKE AND EFFLUENT CHARACTERISTICS (continued from page 2) of Form 2-C)**

PART A. Summarize the results of at least one analysis for every pollutant in this table. Complete one table for each pollutant. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT			3. INPUTS			4. RELEASE (continued)		
	(1) CONCENTRATION	(2) MASS CONCENTRATION	(3) MASS CONCENTRATION	(4) SPECIFIC CONCENTRATION	(5) CONCENTRATION	(6) MASS CONCENTRATION	(7) SPECIFIC CONCENTRATION	(8) CONCENTRATION	(9) MASS CONCENTRATION
a. Biochemical Oxygen Demand (BOD)	61	419.39	17.6	1,471.1	NA	NA	NA	NA	NA
b. Chemical Oxygen Demand (COD)	202	2,122.0	NA	NA	NA	NA	NA	mg/L	mg/L
c. Total Organic Carbon (TOC)	181.5	1,911.7	86.0	219.0	51.7	4,262	4.10	mg/L	mg/L
d. Total Suspended Solids (TSS)	150	1,360.8	35.3	344.0	16.0	126.8	4.79	mg/L	mg/L
e. Ammonia (as N)	0.7	7.6	NA	NA	NA	NA	1	mg/L	mg/L
f. Flow	VALUE	1,514	VALUE	1,511	VALUE	0.917	1013	MGD	MGD
g. Temperature (winter)	VALUE	35.06	VALUE	31.06	VALUET	26.06	237	°F	°F
h. Temperature (summer)	VALUET	48.21	VALUET	39.41	VALUET	37.45	224	°C	°C
i. pH	AVARIATE	8.3	MINIMUM	8.3	MAXIMUM	8.3	1	STANDARD UNITS	1

PART B. Mark "X" in column 2 for each pollutant you know or have reason to believe is present. Mark "N" in column 2b for each pollutant you believe to be absent. If you mark column 2a, you must provide which is limited either directly or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant for which no limits or requirements exist. See the instructions for additional details and requirements.

1. POLLUTANT AND ID NO. (if available)	2. MARK X			3. EFFLUENT			4. INPUTS			5. RELEASE (continued)		
	a. MAXIMUM DAILY VALUE b. MAXIMUM IN DAY VALUE c. CONCENTRATION d. CONCENTRATION e. CONCENTRATION	f. CONCENTRATION g. CONCENTRATION h. CONCENTRATION	i. CONCENTRATION j. CONCENTRATION k. CONCENTRATION	l. CONCENTRATION m. CONCENTRATION n. CONCENTRATION	o. CONCENTRATION p. CONCENTRATION q. CONCENTRATION	r. CONCENTRATION s. CONCENTRATION t. CONCENTRATION	u. CONCENTRATION v. CONCENTRATION w. CONCENTRATION	x. CONCENTRATION y. CONCENTRATION z. CONCENTRATION	y. CONCENTRATION z. CONCENTRATION a. CONCENTRATION	z. CONCENTRATION a. CONCENTRATION b. CONCENTRATION	y. CONCENTRATION z. CONCENTRATION a. CONCENTRATION	
a. Bromide (24950-67-0)	X			<100	<1,652	NA	NA	NA	1	mg/L	mg/L	mg/L
b. Chlorine	X				1.79	<0.156	<1.24	<0.87	1.19	mg/L	mg/L	mg/L
c. Color, Total	X			0.26	NA	NA	NA	NA	1	APHA	NA	NA
d. Fecal Coliform	X			216	NA	NA	NA	NA	1	CFU/100 mL	NA	NA
e. Fluoride (15944-83-8)	X			<50	<555.8	NA	NA	NA	1	mg/L	mg/L	mg/L
f. Nitrate - Nitrite-free N	X			16.8	116.7	NA	NA	NA	1	mg/L	mg/L	mg/L
g. Nitrogen, Total Organic (as N)	X			1.5	16.29	NA	NA	NA	1	mg/L	mg/L	mg/L
h. Oil and Grease	X			<5.1	<52.2	NA	NA	NA	1	mg/L	mg/L	mg/L
i. Phosphorus Total (P, Total)	X			7.75	81.5	NA	NA	NA	1	mg/L	mg/L	mg/L
j. Salinity/Activity												
(1) Alpha, Total	X											
(2) Beta, Total	X											
Total Radium	X											
Total												

4.11 Presence due to natural background radiation.

Computer Generated EPA Form 1510-2C (Rev 2-85)

PAGE V.1

## ITEM 1. RECOMMENDED FROM FRONT

1. POLLUTANT AND AS MC (if available)	2. MARK X	3. TEST, IF RE- QUIRED OR MADE PRESENT	4. IF NO, TEST, IF RE- QUIRED OR MADE PRESENT	5. IF YES, TEST, IF RE- QUIRED OR MADE PRESENT
1. Arsenic, Total (1,840, 31,5)	X	b. If TESTED PRESENT	a. MAXIMUM DAILY VALUE: b. IF TESTED PRESENT	c. LONG TERM AVERAGE IF TESTED
2. Barium (1,840, 70,5)	X		2,130 0.119	23,452 1.15
3. Cadmium, Total (1,840, 45,3)	X		21.0 0.215	NA NA
4. Cobalt, Total (1,840, 20,5)	X		0.29 0.01	0.05 0.11
5. Chromium, Total (1,840, 10,3)	X		0.042 <1	0.14 <0.4
6. Copper, Total (1,840, 4,5)	X		3.49 0.042	36.70 0.44
7. Iron, Total (1,840, 48,4)	X		0.38 0.015	2.04 <0.15
8. Lead, Total (1,840, 32,6)	X		0.10 0.042	NA NA
9. Magnesium, Total (1,840, 70,4)	X		0.40 0.042	NA NA
10. Manganese, Total (1,840, 96,2)	X		0.38 0.038	NA NA
11. Nickel, Total (1,840, 96,5)	X		0.10 0.016	NA NA
12. Tin, Total (1,840, 31,5)	X		0.10 0.016	NA NA
13. Titanium, Total (1,840, 12,6)	X		0.10 0.016	NA NA

If you are a primary industry and this part contains processes or activities refer to Table 2c-2 in the instructions to determine which of the GCNS fractions you must test for. Mark 'X' in column 2-a for secondary industries, nonprocesses, wastewater industries, and nonregulated TCE MS fractions, mark 'X' in column 2-b for each pollutant you know or have reason to believe is present. Mark 'X' in column 2-c for each pollutant die results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acetone, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe may you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages in this part. Please review each carefully. Complete one table (all 7 pages) for each pollutant. See instructions for additional details and requirements.

## PART C...

If you are a primary industry and this part contains processes or activities refer to Table 2c-2 in the instructions to determine which of the GCNS fractions you must test for. Mark 'X' in column 2-a for secondary industries, nonprocesses, wastewater industries, and nonregulated TCE MS fractions, mark 'X' in column 2-b for each pollutant you know or have reason to believe is present. Mark 'X' in column 2-c for any pollutant you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acetone, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe may you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages in this part. Please review each carefully. Complete one table (all 7 pages) for each pollutant. See instructions for additional details and requirements.

1. POLLUTANT AND AS MC (if available)	2. MARK X	3. TEST, IF RE- QUIRED OR MADE PRESENT	4. MAXIMUM DAILY VALUE: b. IF TESTED PRESENT	5. LONG TERM AVERAGE IF TESTED	6. UNITS	7. INSTANTANEOUS AVG. CONC. N.D.	8. INSTANTANEOUS AVG. CONC. N.D.
1. Arsenic, Total (1,840, 41,7)	X		<0.06 0.014	<0.61 0.411	mg/L	mg/L	mg/L
2. Barium, Total (1,840, 41,7)	X		<0.05 0.005	<0.63 0.033	mg/L	mg/L	mg/L
3. Cadmium, Total (1,840, 41,0)	X		<0.05 0.011	<0.03 0.126	mg/L	mg/L	mg/L
4. Chromium, Total (1,840, 41,7)	X		0.129 0.015	0.07 0.057	mg/L	mg/L	mg/L
5. Copper, Total (1,840, 41,7)	X		0.129 0.015	0.06 0.05	mg/L	mg/L	mg/L

(11) Preferred due to natural background radiation.

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PAGE V2

CONTINUE ON NEXT PAGE

## ITEM V.C (CONTINUED)

1 POLLUTANT AND GAS NO. of compound	2 MARK NO.	3 RE- LIEVED PRESENT	4 MANUFACTURED DAILY VALUE*		5 INFLUENT AND VALUE (if available)		6 INFLUENT AND VALUE (if available)	7 CONC. CENTRATION (GALLONS)
			(1) CUP, FIBERGLASS	(2) MASS, CENTRIFUGAL	(3) MASS, CENTRIFUGAL	(4) MASS, CENTRIFUGAL		
541 Mercury, Total (7419-97-6)	X	X	0.010	0.018	NA	<0.055	1	mg/L
542 Nickel, Total (7440-02-0)	X	X	0.126	0.9	0.025	0.18	0.02	mg/L
543 Selenium, Total (7438-56-2)	X	X	<0.04	<0.421	NA	NA	1	mg/L
545 Silver, Total (7440-23-4)	X	X	<0.01	<0.105	NA	NA	1	mg/L
546 Sodium, Total (7440-28-0)	X	X	<0.02	<0.210	NA	NA	1	mg/L
547 Zinc, Total (7440-96-6)	X	X	0.169	1.46	0.255	1.86	0.76	mg/L
548 Cyanide, Total (63-12-5)	X	X	0.002	0.08	NA	NA	1	mg/L
549 Phenols, Total Phenolics, Recoverable BIOXIN	X	X	0.011	0.22	NA	NA	1	mg/L
550 1,2,5-trichloro- ethene & Dioxane (126-01-6)	X				NA	NA	1	mg/L
GROSS FRACTION VOLATILE COMPOUNDS								
551 Acetone (102-02-3)	X	X	<50	<0.515	NA	NA	1	mg/L
552 Acrylonitrile (107-11-1)	X	X	<50	<0.516	NA	NA	1	mg/L
553 Benzene (118-01-2)	X	X	<10	<0.103	NA	NA	1	mg/L
554 Bromoform (75-25-2)	X	X	<10	<0.086	NA	NA	1	mg/L
555 Carbon Tetrachloride (56-23-5)	X	X	<10	<0.11	<0.11	<0.10	1	mg/L
556 Chlorobenzene (108-06-7)	X	X	<10	<0.103	NA	<10	<0.000	mg/L
557 Chlorobutenone- methane (121-48-1)	X	X	<10	<0.086	NA	NA	1	mg/L
558 Chlorothiophene (75-00-1)	X	X	<50	<0.63	<0.63	<0.54	<0.40	mg/L
559 2-Chloroethyl Ester (110-55-3)	X	X	<10	<0.086	NA	NA	1	mg/L
560 Chlorofrom (67-66-2)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
561 Dichlorobromo- methane (75-23-4)	X	X	<10	<0.086	NA	NA	1	mg/L
562 1,1-Dichloro- ethane (75-34-3)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
563 1,2-Dichloro- ethane (101-06-2)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
564 1,1-Dichloro- ethane (75-56-4)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
565 1,2-Dichloro- ethane (75-67-5)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
566 1,1-Dichloro- propane (52-75-6)	X	X	<10	<0.13	<0	<0.12	<0	mg/L
567 Ethylbenzene (106-41-4)	X	X	<10	<0.103	NA	NA	<0	mg/L

Continued on next page

PAGE V.3

CONTINUE ON NEXT PAGE

## ITEM V.C. CONTINUED

## I.A.(007129)

2 MARKIN'		3. EFFLUENT		4. INFLUENT		5. INFLUENT CONCENTRATION	
ITEM NO.	TEST	TEST	TEST	TEST	TEST	TEST	TEST
ITEM NO.	TEST	TEST	TEST	TEST	TEST	TEST	TEST
1. POLYUFANT Aldicarb 110 or malathion	N	N	N	N	N	N	N
20V. Methyl Bromide (71.81.91)	N	<50	<0.432	N	N	N	N
21S. Nitrobi Chloride (81.81.8)	N	<50	<0.63	<0.58	<50	<0.40	1.41
33V. Methylene Chloride (75.92.2)	N	N	<10	<0.35	<10	<0.16	1.11
33V. 1,1,2,2-Tetra- chloroethane (76.1.5)	N	<10	<0.086	N	N	N	N
34V. Tetrafluoro- ethylene (112.1.8.3)	N	<10	<0.13	<0.12	<10	<0.08	1.40
35V. Toluene (75.52.3)	N	N	<10	<0.192	N	<10	<0.0001
36V. 1,2-Trichloro- ethane (75.69.5)	N	N	<10	<0.13	<10	<0.08	1.5
37V. 1,1,1,1-Tetrachloro- ethane (71.55.6)	N	N	<10	<0.13	<10	<0.08	1.40
38V. 1,1,2-Trichloro- ethane (75.99.5)	N	N	<10	<0.13	<10	<0.08	1.40
39V. Trichloro- ethylene (79.01.6)	N	N	<10	<0.13	<10	<0.08	1.40
40V. Trichlorofluoro- methane (75.69.1)	N	N	<10	<0.086	N	N	N
41V. Vinyl Chloride (75.51.4)	N	N	<10	<0.13	<10	<0.08	1.41
G. GAINS FRACTION - ACID COMPOUNDS							
1A. 2-Chlorophenol (65.57.8)	N	N	<10	<0.103	<10	<0.103	1.40
2A. 2,4-Dichloro- phenol (120.81.2)	N	N	<10	<0.103	<10	<0.103	1.40
3A. 2,4-Dimethyl- phenol (105.67.9)	N	N	<10	<0.101	<10	<0.101	1.40
4A. 4,4'-Dinitro-0, Cresol (53.1.52.1)	N	N	<50	<0.515	<50	<0.515	1.40
5A. 2,3-Dinitro- phenol (51.128.5)	N	N	<50	<0.515	<50	<0.515	1.40
6A. 2-Nitrophenol (53.5.5.5)	N	N	<10	<0.206	<10	<0.206	1.40
7A. 4-Nitrophenol (109.4.3.2)	N	N	<50	<0.515	<50	<0.515	1.40
8A. p-Chloro-M Cresol (50.50.2)	N	N	<10	<0.101	N	N	N
9A. Trichloro- phenol (57.86.5)	N	N	<50	<0.515	N	N	N
10A. Phenol (108.66.2)	N	N	388.3	2.07	<30.1	<0.08	41.3
11A. 2,3,4-Trichloro- phenol (86.66.2)	N	N	<10	<0.103	N	N	N
G. GAINS FRACTION - BASE/NEUTRAL COMPOUNDS							
13. Acenaphthene (181.12.5)	N	N	<10	<0.103	<10	<0.103	1.40
20. Acenaphthene (203.26.5)	N	N	<10	<0.103	<10	<0.103	1.40
38. Anthracene (119.12.1)	N	N	<10	<0.103	<10	<0.103	1.40
40. Phenanthrene (202.87.5)	N	N	<50	<0.515	N	N	N
59. Dodecahydronaphthalene (165.55.5)	N	N	<10	<0.103	<10	<0.103	1.40
60. Decadecylbenzene (165.55.5)	N	N	<10	<0.103	<10	<0.103	1.40
61. Decadecylbenzene (165.55.5)	N	N	<10	<0.103	<10	<0.103	1.40

Computer Generated Under EPA Form 1510-2C (Rev 2-85)

PAGE V.4

1102

21

• Dereliction of duty legal, believed to be laboratory artifact.

Environmental Contamination EPA-EPA-1110-1C (Rev. 7-85)

Annual General ERA Event 151016 (B777-785)

WATER CONSTITUENTS												LAW 0007120					
1 POLLUTANT AND/OR SUBSTANCE		2 MARK X		3 MANDATORY VALUE		4 MANDATORY VALUE		5 EFFLUENT CONSTITUENTS		6 CONSTITUENTS OF UNKNOWN ORIGIN		7 INFLUENT CONSTITUENTS		8 LAW 0007120			
POLLUTANT NAME/NO. OR SUBSTANCE	TEST, BUREAU NUMBER	TEST, METHOD	TEST, METHOD	MANDATORY VALUE IF UNKNOWN OR SUBSTANCE	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS	TEST, CLASS				
15R Hexachloroethane (77-47-4)	X	X	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
26R Hexachlorobutane (67-72-3)	X	X	<10	<0.206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15R Indeno[1,2,1-ef]fluorene (193-36-5)	X	X	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15R Laphorone (78-61-1)	X	X	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15R Naphthalene (91-40-3)	X	X	<10	<0.103	<10	<0.103	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	
15R Naphthalene (91-40-3)	X	X	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	
41R 4-Nitromethylmethy- amine (62-35-8)	X	X	<50	<0.515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
47D N-Nitrosodi-N- Propylamine (621-64-7)	X	X	<20	<0.206	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
41R N-Nitrosophenyl- azine (261-36-6)	X	X	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
44B Phenanthrene (155-01-8)	X	X	<10	<0.103	<10	<0.103	<10	<0.103	NA	NA	NA	NA	NA	NA	NA	NA	
45H Pyrene (131-01-0)	X	X	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	
46B 1,2,4-Trichloro- benzene (120-52-1)	X	X	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	<10	<0.103	
GENERIC FRACTION - PESTICIDES												LAW 0007120					
1P Aldrin (108-00-2)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
2P ALDRIN-RHC (110-84-6)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P DDT-BHC (119-85-7)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P DDT-L-BHC (155-80-9)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P GAMMA-BHC (119-86-8)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P Chlordane, Technical (527-71-9)	X	X	<2.5	<0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P 4,4'-DDT (550-90-3)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P A,A'-DDDE (72-54-9)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
1P 4,4'-DDD (123-54-8)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
10P Dieldrin (60-57-1)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
11P ALPHA-Endosulfan I (1115-39-7)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
12P HETA Endosulfan II (1115-39-7)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
13P Endosulfan Sulfate (10131-07-8)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
14P Endrin (72-26-5)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
15P Endrin Aldehyde (1421-93-3)	X	X	<1	<0.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
16P Heptachlor (72-41-5)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
17P Heptachlor Epoxide (101-13-3)	X	X	<0.5	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

## ITEM V-C CONTINUED

1. POLLUTANT AND CAS NO (if available)	2. MARK-X	3. TEST, DATE: TESTED COMPLETED	4. MAXIMUM VALUE TESTED CENTRAL POINT	5. EFFLUENT TESTED CENTRAL POINT	6. MAXIMUM DAILY VALUE (if available)		7. INFLUENT TESTED CENTRAL POINT		8. INFLUENT TESTED CENTRAL POINT	
					6. MAXIMUM DAILY VALUE TESTED CENTRAL POINT	7. INFLUENT TESTED CENTRAL POINT	8. INFLUENT TESTED CENTRAL POINT	9. INFLUENT TESTED CENTRAL POINT	10. INFLUENT TESTED CENTRAL POINT	
18P TCN-1242 (5,140-21,0)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
18P PFB-1254 (1,102-60,0)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
20P PFB-1221 (1,104-26,2)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
21P PCH-1222 (1,111-16,5)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
22P PFB-1248 (1,262-29,6)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
23P PFB-1260 (1,006-81,5)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
24P PFB-1016 (1,264-11,2)	X	N	<10	<0.105	N/A	N/A	N/A	N/A	0.105	
25P Toluene (80-14,5)	X	N	<50	<0.516	N/A	N/A	N/A	N/A	0.516	
OTHER PARAMETERS										
Hg, Chromium		X	<0.01	<0.006	N/A	N/A	N/A	1	mg/L	
									mic/L	
									micgrams	

Computer Generated EPA form 1510.2C (Rev. 2-85)

PAGE V-2

PLEASE PRINT OR TYPE IN THE UNSHADED AREA ONLY. YOU MAY RECORD SCREWS OR ALL OF THIS INFORMATION ON SEPARATE SHEETS OVER THE SAME FORM, INSTEAD OF COMPLETING THESE PAGES.

SELF-INSTRUMENTED

#### V. INTAKE AND EFFLUENT CHARACTERISTICS (continued from page 3 of Form 2-C)

PART A - You must provide the results of at least one analysis for each pollutant in this table. Complete one table for each pollutant. See instructions for additional details.

1. POLLUTANT AND CAS NO. (if available)	2. EFFLUENT			3. INTAKE (continued)		
	a. MAXIMUM DAILY VALUE (available)	b. MAXIMUM 10 DAY VALUE (available)	c. LONG TERM AVERAGE VALUE (if available)	d. NO. OF ANALYSES	e. CONC. CENTRATION	f. MASS CONCENTRATION
a. Biochemical Oxygen Demand (BOD)	<6	<17.3	N/A	N/A	1	mg/L
b. Chemical Oxygen Demand (COD)	83	3,156.5	42.7	1,427.7	13.2	mg/L
c. Total Organic Carbon (TOC)	19	545.6	N/A	N/A	1	mg/L
d. Total Suspended Solids (TSS)	15	40.7	N/A	N/A	1	mg/L
e. Ammonium (NH <sub>3</sub> N)	1.4	40.2	N/A	N/A	1	mg/L
f. Flow	VALUE	6,720	VALUE	4,960	1.466	L/MIN
g. Temperature (winter)	VALUE	17	VALUE	N/A	1	°C
h. Temperature (summer)	MIN/MAX	MAX/MIN	MAX/MIN	N/A	1	STANDARD UNITS
i. pH	7.10	7.30	7.30	N/A	1	VALUE
j. MARK X	MARK X			MARK X		
k. Intake or Effluent	Effluent	Effluent	Effluent	Effluent	Effluent	Effluent
1. POLLUTANT AND CAS NO. (if available)	a. MAXIMUM DAILY VALUE (available)	b. MAXIMUM 10 DAY VALUE (available)	c. LONG TERM AVERAGE VALUE (if available)	d. NO. OF ANALYSES	e. CONC. CENTRATION	f. MASS CONCENTRATION
a. Bromide (28939-67-3)	N	<20	<74.3	N/A	N/A	N/A
b. Chlorine, g/l	N	<0.1	<5.00	<0.1	<4.14	mg/L
c. Dissolved, Total Chlorine, Total	N	N/A	N/A	N/A	N/A	N/A
d. Fecal Coliform	N	42	N/A	N/A	0.2	CFU/100 ml
e. Fluoride (147-44-5)	N	<10	<287.4	*	N/A	N/A
f. Nitrate - Nitrite (NO <sub>2</sub> -N)	N	0.108	3.1	N/A	N/A	mg/L
g. Nitrogen Total Organic (NO <sub>x</sub> )	N	<1	<18.7	N/A	N/A	mg/L
h. CN and Cresene	N	<5.1	<16.4	N/A	N/A	mg/L
i. Phenol (see Pt. Test (722-14-0))	N	1.54	45.4	N/A	N/A	mg/L
j. Radioactivity						
(1) Alum	6					
Total	N	N/A	N/A	N/A	N/A	N/A
(2) Beta	N	N/A	N/A	N/A	N/A	N/A
Total	N	N/A	N/A	N/A	N/A	N/A
(3) Cadmium, Total	N	1.00E-04	NA	NA	1	mg/L

Mark "X" in column 2-a for each pollutant you believe to be present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2-a for any pollutant which is limited either directly or indirectly by express or in effluent limitations guidelines, you must provide the results of all effluent analyses for that pollutant for which you mark column 2-b, you must provide an explanation of their presence in your discharge. Complete one table for each outlet. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (if available)	2. EFFLUENT			3. INTAKE (continued)		
	a. MAXIMUM DAILY VALUE (available)	b. MAXIMUM 10 DAY VALUE (available)	c. LONG TERM AVERAGE VALUE (if available)	d. NO. OF ANALYSES	e. CONC. CENTRATION	f. MASS CONCENTRATION
a. Bromide (28939-67-3)	N	<20	<74.3	N/A	N/A	N/A
b. Chlorine, g/l	N	<0.1	<5.00	<0.1	<2.91	mg/L
c. Dissolved, Total Chlorine, Total	N	N/A	N/A	N/A	N/A	N/A
d. Fecal Coliform	N	42	N/A	N/A	0.2	CFU/100 ml
e. Fluoride (147-44-5)	N	<10	<287.4	*	N/A	N/A
f. Nitrate - Nitrite (NO <sub>2</sub> -N)	N	0.108	3.1	N/A	N/A	mg/L
g. Nitrogen Total Organic (NO <sub>x</sub> )	N	<1	<18.7	N/A	N/A	mg/L
h. CN and Cresene	N	<5.1	<16.4	N/A	N/A	mg/L
i. Phenol (see Pt. Test (722-14-0))	N	1.54	45.4	N/A	N/A	mg/L
j. Radioactivity						
(1) Alum	6					
Total	N	N/A	N/A	N/A	N/A	N/A
(2) Beta	N	N/A	N/A	N/A	N/A	N/A
Total	N	N/A	N/A	N/A	N/A	N/A
(3) Cadmium, Total	N	1.00E-04	NA	NA	1	mg/L

- (1) Measured from 1992 Permit Application.
- (2) Does not represent a true background elevation.
- (3) Present due to older background remediation.

Computer-Generated Version 2.0 (Rev. 2-85)

ITEM 1. (CONTINUED) FROM FRONT		2. MARK 'X'		3. MARK 'X'		4. UNITS		5. INTAKE (continued)	
1. POLLUTANT AND SOURCE(s) (if applicable)		a. MAXIMUM DAILY VALUE (1) CONC. CENTRATION (2) MASS CENTRATION		b. MAXIMUM DAILY VALUE (1) CONC. CENTRATION (2) MASS CENTRATION		c. LONG TERM AVG. VALUE (1) CONC. CENTRATION (2) MASS CENTRATION		d. INFECTION AFFECTED ANALYSES (1) CONC. CENTRATION (2) MASS CENTRATION	
1. Sodium, Total (1,430-79-8)	X	0.2647	NA	NA	NA	NA	NA	1	mg/L
2. Sulfate, As SO <sub>4</sub> (1,430-54-5)	X	3.69	10.021	NA	NA	NA	NA	1	mg/L
3. Sulphite, As S (7440-28-8)	X	0.0216	1.01	NA	NA	NA	NA	1	mg/L
4. Ammonium, Total (7447-90-5)	X	<0.1	>28.71	NA	NA	NA	NA	1	mg/L
5. Barium, Total (7440-62-3)	X	1.1	21.6	NA	NA	NA	NA	1	mg/L
6. Boron, Total (7440-28-8)	X	<1	<28.71	NA	NA	NA	NA	1	mg/L
7. Cobalt, Total (7446-18-4)	X	<0.01	<0.59	NA	NA	NA	NA	1	mg/L
8. Iron, Total (7440-09-6)	X	3.32	95.73	NA	NA	NA	NA	1	mg/L
9. Magnesium, Total (7440-25-9)	X	41.9	1,203.1	NA	NA	NA	NA	1	mg/L
10. Manganese, Total (7440-99-7)	X	0.063	1.91	NA	NA	NA	NA	1	mg/L
11. Nitrogen, Total (7440-26-5)	X	0.38	10.91	NA	NA	NA	NA	1	mg/L
12. Tin, Total (7440-31-5)	X	<0.035	<0.718	NA	NA	NA	NA	1	mg/L
13. Uranium, Total (7440-26-9)	X	<0.10	<2.82	NA	NA	NA	NA	1	mg/L
If you are a primary industry and this effluent contains process wastewater, refer to Table 2c in the instructions to determine which of the CEFMS fractions you must test for. Mark 'X' in column 2a for all such CEFMS fractions, columns 2b for each pollutant you know or have reason to believe is present. If you are not required to mark column 2a for secondary industries, nonresidential wastewater only, and 'X' in column 2c for each pollutant you know or have reason to believe is present. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppm or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the pollutant or explain why discharged. Note that there are 7 pages to this part, please review each carefully. Complete one table (all 7 pages) for each effluent. See instructions for additional details and requirements.									
1. POLLUTANT AND SOURCE(s) (if applicable)		2. MARK 'X'		3. MARK 'X'		4. UNITS		5. INTAKE (continued)	
a. TEST, QUANTITY OBTAINED		b. MAXIMUM DAILY VALUE (1) CONC. CENTRATION (2) MASS CENTRATION		c. LONG TERM AVG. VALUE (1) CONC. CENTRATION (2) MASS CENTRATION		d. INFECTION AFFECTED ANALYSES (1) CONC. CENTRATION (2) MASS CENTRATION		e. INFECTION AFFECTED ANALYSES (1) CONC. CENTRATION (2) MASS CENTRATION	
METALS, CYANIDE, AND TOTAL PHENOLICS									
14. Ammonium, Total (7446-16-9)	X	X	<0.06	<1.72	NA	NA	NA	1	mg/L
15. Arsenic, Total (7440-38-2)	X	X	0.063	1.91	NA	NA	NA	1	mg/L
16. Boron, Total (7440-21-7)	X	X	<0.005	0.14	NA	NA	NA	1	mg/L
17. Cadmium, Total (7440-13-9)	X	X	<0.005	<0.64	NA	NA	NA	1	mg/L
18. Chromium, Total (7440-17-3)	X	X	<0.01	<0.29	NA	NA	NA	1	mg/L
19. Copper, Total (7440-09-3)	X	X	<0.01	<0.39	NA	NA	NA	1	mg/L
20. Lead, Total (7440-72-1)	X	X	<0.015	<0.43	NA	NA	NA	1	mg/L

(1) Present for all listed herein and multiply.

PAGE V-1

## ITEM NO. CONTINUED

A.I.D. NUMBER (Enter from Item 1 of Form 1)

1011FA

1 POLLUTANT AND ASSAY REF ID# (Enter)	2 MARK X IF TEST WAS PERFORMED	3 EFFLUENT CONCENTRATION (ppm)	4 MAXIMUM DAILY VALUE		5 MAXIMUM DAILY VALUE		6 LONG TERM AVERAGE VALUE (ppm)		7 AVERAGE DAILY CONCENTRATION (ppm)		8 INTRATE (ppm)	
			6 BE- FORE ADSORB-		7 MASS CONCENTRATION (ppm)		8 CON- CENTRATION (ppm)		9 CON- CENTRATION (ppm)		10 CON- CENTRATION (ppm)	
			PRESENT	ABSENT	MASS	CONCENTRATION	MASS	CONCENTRATION	MASS	CONCENTRATION	AVERAGE VALUE	INTRATE
51. Nitrogen, Total (7410-21-6)	X	X	<0.0002	<0.0006	NA	NA	NA	NA	NA	NA	NA	NA
52. Phosphorus, Total (7440-03-0)	X	X	<0.04	<1.15	NA	NA	NA	NA	NA	NA	NA	NA
53. Selenum, Total (7783-45-2)	X	X	<0.04	<1.15	NA	NA	NA	NA	NA	NA	NA	NA
54. Silver, Total (7440-22-0)	X	X	<0.01	<0.29	NA	NA	NA	NA	NA	NA	NA	NA
55. Thodium, Total (7440-25-0)	X	X	<0.02	<0.57	NA	NA	NA	NA	NA	NA	NA	NA
56. Zinc, Total (7440-66-0)	X	X	<0.02	<0.57	NA	NA	NA	NA	NA	NA	NA	NA
57. Copper, Total (75-12-5)	X	X	<0.02	<0.57	NA	NA	NA	NA	NA	NA	NA	NA
58. Manganese, Total Chromatographable DODIN	X	X	0.008	0.21	NA	NA	NA	NA	NA	NA	NA	NA
59. 2,3,7,8-Tetrachloro- dibenzo-p-Dioxin (117-01-6)	X	X	<10	<2.8x10 <sup>-6</sup>	NA	NA	NA	NA	NA	NA	NA	NA
<b>CATIONIC FRACTION - VOLATILE COMPOUNDS</b>												
60. Acetone (107-02-8)	X	X	<50	<1.436	NA	NA	NA	NA	NA	NA	NA	NA
61. Acetonitrile (107-13-1)	X	X	<50	<1.416	NA	NA	NA	NA	NA	NA	NA	NA
62. Benzene (71-41-2)	X	X	<10	<0.387	NA	NA	NA	NA	NA	NA	NA	NA
63. Bromodifluoromethane (75-25-2)	X	X	<10	<0.347	NA	NA	NA	NA	NA	NA	NA	NA
64. Carbon Tetrachloride (56-22-5)	X	X	<10	<0.347	NA	NA	NA	NA	NA	NA	NA	NA
65. Chlorobutene (109-90-2)	X	X	<10	<0.347	NA	NA	NA	NA	NA	NA	NA	NA
66. Chlorochloroacetic acid (54-44-1)	X	X	<10	<0.347	NA	NA	NA	NA	NA	NA	NA	NA
67. Chloroethane (75-00-3)	X	X	<50	<1.436	NA	NA	NA	NA	NA	NA	NA	NA
68. 2-Chloroethyl- vinyl Ether (110-75-8)	X	X	<10	<0.347	NA	NA	NA	NA	NA	NA	NA	NA
69. Chloroform (53-66-2)	X	X	<10	<0.346	<0.4	<0.4	<0.10	<0.004	0.13	0.13	0.13	0.13
70. Dichloromethane (75-72-4)	X	X	<10	<0.287	NA	NA	NA	NA	NA	NA	NA	NA
71. 1,1-Dichloro- ethane (75-34-3)	X	X	<10	<0.247	NA	NA	NA	NA	NA	NA	NA	NA
72. 1,2-Dichloro- ethane (75-87-3)	X	X	<10	<0.247	NA	NA	NA	NA	NA	NA	NA	NA
73. 1,3-Dichloro- propane (78-87-6)	X	X	<10	<0.287	NA	NA	NA	NA	NA	NA	NA	NA
74. Ethylbenzene (100-41-4)	X	X	<10	<0.287	NA	NA	NA	NA	NA	NA	NA	NA

Computer Determined EPA Form 1310-2C (Rev. 2-85)

PAGE V

CONTINUATION PAGE

## FIELD NO. (continued)

EIA0007129

1. POLLUTANT AND CONC. MO. (if applicable)	2. MARK X	3. EFFLUENT				4. UNITS				5. INTAKE (intake)						
		1. TEST. PERFORMED	2. REF. PRESENT	3. MAXIMUM DAILY VALUE	4. MAXIMUM DAILY VALUE	5. LONG-TERM AVERAGE	6. CONCENTRATION	7. INP. OF ANALYSIS	8. CONC. IN PPM	9. INP. OF ANALYSIS	10. CONC. IN PPM	11. CONC. IN PPM	12. MASS CONCENTRATION	13. MASS CONCENTRATION	14. INP. OF ANALYSIS	15. INP. OF ANALYSIS
20V. Acetate Bromide (74.81.9)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
21V. Methyl Chloride (74.81.3)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
22V. Methane Chloride (75.00.2)	X	X	<10	<0.574	NA	NA	NA	NA	1	1	1	1	1	1	1	1
23V. 1,1,2,2-Tetrachloroethane (112.14.5)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
24V. Tetrachloroethylene (127.8.4)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
25V. Toluene (108.38.3)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
26V. 1,2-Tetrachloroethane (116.96.5)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
27V. 1,1,1-Trichloroethane (71.55.6)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
28V. 1,1,2-Trichloroethane (79.09.3)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
29V. Trichloroethylene (119.01.6)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
30V. Trichloroethane (wellhead) (75.65.6)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
31V. Vinyl Chloride (75.9.-1)	X	X	<10	<0.56	<1.0	<0.4	<0.10	<0.10	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
<b>CC/NIS FRACTION - ACID COMPOUNDS</b>																
1A. 2-Chlorophenol (95.57.2)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
2A. 2,4-Dichloro-phenol (120.43.2)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
3A. 2,4-Dimethyl-phenol (105.47.9)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
4A. 4,6-Dinitro-O-Cresol (51.54.22.1)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
5A. 2,4,7-Triuro-phenol (51.25.3)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
6A. 2-Nitrophenol (58.75.5)	X	X	<10	<0.574	NA	NA	NA	NA	1	1	1	1	1	1	1	1
7A. 4-Nitrophenoxy-1,1-biphenyl (109.92.7)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
8A. <i>P</i> -Chloro-M-Cresol (59.50.2)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
9A. Phenochlorophenol (77.86.5)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
10A. Phenol (108.93.2)	X	X	106.2	0.49	<1.67	<0.44	<0.11	<0.11	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
11A. 2,4,6-Tribromo-phenol (98.06.3)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
<b>CC/NIS FRACTION - BASE/NEUTRAL COMPOUNDS</b>																
1B. Acenaphthene (31.12.9)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
2B. Acenaphthylene (20.96.8)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
3B. Anthracene (110.12.7)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
4B. Benzene	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
5B. Benzene (57.12.5)	X	X	<10	<1.436	NA	NA	NA	NA	1	1	1	1	1	1	1	1
6B. Benzene/Anthracene (55.65.3)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1
7B. Benzene/Phenol (50.12.5)	X	X	<10	<0.287	NA	NA	NA	NA	1	1	1	1	1	1	1	1

## ITEM V-C CONSTITUENTS

LA0007129

102

1. POLLUTANT AND/AS NO (if available)	2. MARK X	3. EFFLUENT TEST, W. TEST, LIVED PRESENT	4. MAXIMUM DAILY VALUE (1) CONC. (2) MASS CENTRATION	5. CONSTITUENT ANALYSE (1) CONC. (2) MASS CENTRATION	6. INPUTS		7. INTAKE (optional) W. INTAKE AVAILABLE (1) CONC. (2) MASS CENTRATION	8. INTAKE (optional) W. INTAKE AVAILABLE (1) CONC. (2) MASS CENTRATION
					9. CONC. (1) CONC. (2) MASS CENTRATION	10. MASS CENTRATION		
7H. 3,4-Benzofer- aniline (205-92-2)	X	X	<10	<0.347	NA	NA	NA	NA
8H. Benzofuran-2-yne (111-21-2)	X	X	<10	<0.374	NA	NA	NA	NA
9H. Benzofuran- aniline (207-08-2)	X	X	<10	<0.387	NA	NA	NA	NA
10H. Bis(2-Mercap- toxy)Methane (111-21-1)	X	X	<10	<0.387	NA	NA	NA	NA
11H. Butyl-bis(benzo- ethoxyether)(111-34-3)	X	X	<10	<0.387	NA	NA	NA	NA
12H. Butyl-Chloro- ether-Ether (102-56-1)	X	X	<10	<0.387	NA	NA	NA	NA
13H. Bis(2-Ethoxyethyl)- Phthalate (117-41-7)	X	X	<10	<0.387	NA	NA	NA	NA
14H. 4-Bromophenol Thiob-Ether (101-55-3)	X	X	<10	<0.387	NA	NA	NA	NA
15H. Butyl-1-Ethoxy- Phthalate (82-68-2)	X	X	<10	<0.387	NA	NA	NA	NA
16H. 2-Chloromethylbenzene (91-54-7)	X	X	<10	<0.387	NA	NA	NA	NA
17H. 4-Chloro-1- Methyl-Ether (100-72-3)	X	X	<10	<0.387	NA	NA	NA	NA
18H. Chlorone (212-01-9)	X	X	<10	<0.387	NA	NA	NA	NA
19H. Ethylene (48-08-3)	X	X	<10	<0.374	NA	NA	NA	NA
20H. 1,2-Dichloro- Benzene (95-57-1)	X	X	<10	<0.387	NA	NA	NA	NA
21H. 1,2-Dichloro- Benzene (541-23-1)	X	X	<10	<0.387	NA	NA	NA	NA
22H. 1,4-Dichloro- Benzene (106-46-2)	X	X	<10	<0.387	NA	NA	NA	NA
23H. 3,3-Dichloro- Benzene (92-54-1)	X	X	<50	<1.434	NA	NA	NA	NA
24H. Ethoxy Ethylate (242-62-2)	X	X	<10	<0.387	NA	NA	NA	NA
25H. Dimethyl Phthalate (131-15-3)	X	X	<10	<0.387	NA	NA	NA	NA
26H. Di- <i>t</i> -Butyl- Phthalate (84-74-2)	X	X	<10	<0.387	NA	NA	NA	NA
27H. 2,4-Dimethylene (121-14-2)	X	X	<10	<0.387	NA	NA	NA	NA
28H. 2,6-Dimethylene (109-20-2)	X	X	<10	<0.387	NA	NA	NA	NA
29H. Di- <i>n</i> -Octyl- Phthalate (113-43-0)	X	X	<10	<0.387	NA	NA	NA	NA
30H. 1,2-Dibromo- Isoparaffin Di-isobutene	X	X	<10	<0.387	NA	NA	NA	NA
31H. Hexachlorobutene (122-66-7)	X	X	<10	<0.374	NA	NA	NA	NA
32H. Fluorobutene (109-44-0)	X	X	<10	<0.387	NA	NA	NA	NA
33H. Fluorine (76-75-7)	X	X	<10	<0.387	NA	NA	NA	NA
34H. Hexachlorobutene (113-25-1)	X	X	<10	<0.387	NA	NA	NA	NA
35H. Hexachlorobutene (107-65-1)	X	X	<10	<0.387	NA	NA	NA	NA

Computer Generated EPA Form 3510-ZC (Rev. 2-85)

PAGE V-5

CONTINUE ON NEXT PAGE

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## ITEMS C CONTINUED

L-A0007120

1 POLLUTANT Air Gas No (if available)	2 STATUS	3 EFFLUENT		4 UTILIS.		5 INTAKE (continued)	
		a. TEST NO. RE- QUIRED	b. RE- LATED TO PRESENT AMBIENT	c. MAX DAILY VALUE (continued) in cont.	d. MAXIMUM INPUT VALUE (continued) in cont.	e. NO. OF SAMPLES	f. CONC. CENTRATION
1SF PCB-742 (1,1,1,8,21,3)	X	X	<1.0	<0.028	NA	NA	NA
1SF PCB-744 (1,1,9,11,6,9,1)	X	X	<1.0	<0.029	NA	NA	NA
2SF PCB-121 (1,1,1,9,2,8,2)	X	X	<1.0	<0.019	NA	NA	NA
2SF PCB-132 (1,1,1,4,1,6,5)	X	X	<1.0	<0.029	NA	NA	NA
2SF PCB-748 (1,2,6,2,29,6)	X	X	<1.0	<0.029	NA	NA	NA
2SF PCB-150 (1,1,9,18,2,3)	X	X	<1.0	<0.029	NA	NA	NA
2SF PCB-1616 (1,2,6,21,1,2)	X	X	<1.0	<0.019	NA	NA	NA
1SF Tetrachlore (8,9,11-15,2)	X	X	<5.0	<0.144	NA	NA	NA
HEX-Chromium OTHER PARAMETERS		X	0.027	0.775	NA	NA	NA
					mg/L	mg/L	mg/L

Please print or type in THE UNSHADED AREA ONLY. You may repeat some or all of the information on separate sheets  
over the cover page instead of completing these boxes.

From Approved  
On March 2006  
Approval Expires 7-1-08

EPA-9050-NTM-04-01 Rev. 1 (Form 1510-2C) (Rev. 2-1-08)

## V. INTAKE AND EMISSION CHARACTERISTICS (continued from page V of Form 2-C)

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each pollutant. See instructions for additional details.

1 POLLUTANT	2 ELEMENT						3 INTAKE			4 INJURE		
	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CONCENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION										
a. Biochemical Oxygen Demand (BOD)	131.6	654.1	36.8	310.7	15.9	195.1	4.06	4.06	4.06	4.06	4.06	4.06
b. Chemical Oxygen Demand (COD)	100	816.5	N/A	N/A	N/A	N/A	1	1	1	1	1	1
c. Total Organic Carbon (TOC)	107.3	712.9	10.4	321.5	27.0	215.6	0.95	0.95	0.95	0.95	0.95	0.95
d. Total Suspended Solids (TSS)	276.5	1477.3	65.1	420.5	26.8	203.1	4.11	4.11	4.11	4.11	4.11	4.11
e. Ammonia-NH <sub>3</sub>	<0.1	<0.1	N/A	N/A	N/A	N/A	1	1	1	1	1	1
f. Phen	Value:	1.913	Value:	1.116	Value:	0.944	100.0	100.0	100.0	100.0	100.0	100.0
g. Temperature (units)	Value:	10	Value:	N/A	Value:	N/A	1	1	1	1	1	1
h. Transporter (units)	Value:	N/A	Value:	N/A	Value:	N/A						
i. pH	Natural	7.4	Natural	7.4	Natural	7.4	N/A	N/A	N/A	N/A	N/A	N/A
j. Standard Units	1	1	1	1	1	1	1	1	1	1	1	1
2 MARK "X" FOR EACH POLLUTANT YOU KNOW OR HAVE REASON TO BELIEVE IS PRESENT. MARK "X" IN COLUMN 2b FOR EACH POLLUTANT YOU BELIEVE IS ABSENT. IF YOU MARK COLUMN 2a FOR ANY POLLUTANT WHICH IS UNLISTED, OTHER THAN THOSE INDICATED BY YOUR EXPERTISE, IN AN EFFICIENT LIMITATIONS GUIDELINE, YOU MUST PROVIDE THE RESULTS OF AT LEAST ONE ANALYSIS FOR THAT POLLUTANT. FOR OTHER POLLUTANTS FOR WHICH YOU MARK COLUMN 2a, YOU MUST PROVIDE QUANTITATIVE DATA OR AN EXPLANATION OF THEIR PRESENCE IN YOUR DISCHARGE. COMPLETE ONE TABLE FOR EACH POLLUTANT. SEE INSTRUCTIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS.												
1 POLLUTANT AND CAS NO (if applicable)	2 MARK "X"						3 ELEMENT			4 INTAKE		
b. Bioassay Assessment	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	* MAXIMUM DAILY VALUE (1) CON- CENTRATION (2) MASS CENTRATION	
Dissolved Inorganic Sulfates	X	<0.2	>1.6	N/A	N/A	N/A	N/A	N/A	1	1	1	1
b. Chlorine,	N	1.6	13.15	N/A	N/A	N/A	N/A	N/A	1	1	1	1
c. Total Residual Color, Inc.	N	N/A										
d. Ferulic Coffeic	N	<1	<0.16	N/A	N/A	N/A	N/A	N/A	1	1	1	1
e. Fluoride	N	0.455	3.72	N/A	N/A	N/A	N/A	N/A	1	1	1	1
f. Nitrate Nitrite (NO <sub>2</sub> )	N	0.105	0.16	N/A	N/A	N/A	N/A	N/A	1	1	1	1
g. Phenomenon, Total	N	<0.9	<7.3	N/A	N/A	N/A	N/A	N/A	1	1	1	1
h. Oil and Grease	N	<5.1	<41.64	N/A	N/A	N/A	N/A	N/A	1	1	1	1
i. Phosphorus Total, Total	N	<0.2	<1.63	N/A	N/A	N/A	N/A	N/A	1	1	1	1
j. Radioactivity	N	N/A										
k. (1) Alpha Total	N	N/A										
l. (2) Beta, Total	N	N/A										
m. (3) Radium, Total	N	1.81±0.92	N/A	N/A	N/A	N/A	N/A	N/A	1	1	1	1

(1) Present due to natural background radiation.

(2) Computer Generated EPA Form 1510-2C (Rev. 2-1-08)

PAGE 11

CONTINUE ON NEXT PAGE

## DATA IN COMPUTER-FRONT

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2. MARK-X		3. EFFLUENT		4. UNITS		5. INTAKE (continued)	
POLLUTANT AND CAS NO (if available)	a. TEST- METHOD USED	b. Mf. LEVEL TESTED	c. MAXIMUM DAILY VALUE (if available)	d. LONG TERM AVERAGE CONCENTRATION (if available)	e. CFS	f. CFS	g. CFS
1. POLLUTANT AND CAS NO (if available)	a. TEST- METHOD USED	b. Mf. LEVEL TESTED	c. MAXIMUM DAILY VALUE (if available)	d. LONG TERM AVERAGE CONCENTRATION (if available)	e. CFS	f. CFS	g. CFS
1.1 Antimony, Total (7440-36-0)	N	X	<0.16	<0.19	NA	NA	NA
1.2 Arsenic, Total (7440-38-2)	N	X	<0.04	<0.03	NA	NA	NA
1.3 Barium, Total (7440-61-7)	N	N	<0.05	<0.04	NA	NA	NA
1.4 Cadmium, Total (7440-43-9)	N	N	<0.05	<0.04	NA	NA	NA
1.5 Chromium Total (7430-47-3)	N	N	<0.01	<0.01	NA	NA	NA
1.6 Copper, Total (7440-50-8)	N	N	0.015	0.12	NA	NA	NA
1.7 Lead, Total (7430-02-1)	N	N	<0.015	<0.12	NA	NA	NA
1.8 Zinc, Total (7440-60-5)	N	N	<0.21	<0.63	NA	NA	NA
1.9 Iron, Total (7440-00-1)	N	N	0.018	0.15	NA	NA	NA
1.10 Thorium, Total (7440-42-8)	N	X	<1	<8.165	NA	NA	NA
1.11 Cobalt, Total (7440-38-4)	N	N	<0.01	<0.08	NA	NA	NA
1.12 Iron, Total (7440-50-6)	N	N	0.26	2.12	NA	NA	NA
1.13 Manganese, Total (7440-55-1)	N	N	0.35	1.46	NA	NA	NA
1.14 Molybdenum, Total (7440-38-7)	N	N	<0.050	<0.001	NA	NA	NA
1.15 Manganese, Total (7440-96-5)	N	N	0.034	0.28	NA	NA	NA
1.16 Tin, Total (7440-11-5)	N	N	<0.015	<0.004	NA	NA	NA
1.17 Titanium, Total (7440-32-6)	N	N	<0.010	<0.016	NA	NA	NA

If you are a primary industry and this effluent contains process wastewater, refer to Table 2.c.2 in the instructions to determine which of the GCAIS fractions you must test for. Mark "X" in columns 2-a through 2-d for each pollutant, your process waste outlets, and nonrequired (GCAIS fractions) mark "N" in column 2-b for each pollutant you believe is absent. If you mark column 2-a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you know or have reason to believe it will be discharged in concentrations of 100 ppb or greater, if you mark column 2-b for acetone, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol, you must provide the results of at least one analysis for each of these pollutants, which you know or have reason to believe will be discharged. Note that there are 2 pages in this part; please review each carefully. Complete one table (all 7 pages) for each pollutant. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO (if available)		2. MARK-X		3. EFFLUENT		4. UNITS		5. INTAKE (continued)	
POLLUTANTS, CLANDE, AND TOTAL PENTOLS		a. TEST- METHOD USED	b. Mf. LEVEL TESTED	c. MAXIMUM DAILY VALUE (if available)	d. LONG TERM AVERAGE CONCENTRATION (if available)	e. CFS	f. CFS	g. CFS	h. CFS
1.1 Antimony, Total (7440-36-0)	N	X	<0.16	<0.19	NA	NA	NA	NA	NA
1.2 Arsenic, Total (7440-38-2)	N	X	<0.04	<0.03	NA	NA	NA	NA	NA
1.3 Barium, Total (7440-61-7)	N	N	<0.05	<0.04	NA	NA	NA	NA	NA
1.4 Cadmium, Total (7440-43-9)	N	N	<0.05	<0.04	NA	NA	NA	NA	NA
1.5 Chromium Total (7430-47-3)	N	N	<0.01	<0.01	NA	NA	NA	NA	NA
1.6 Copper, Total (7440-50-8)	N	N	0.015	0.12	NA	NA	NA	NA	NA
1.7 Lead, Total (7430-02-1)	N	N	<0.015	<0.12	NA	NA	NA	NA	NA
1.8 Zinc, Total (7440-60-5)	N	N	<0.21	<0.63	NA	NA	NA	NA	NA

(f) Precaution in natural background variation.

(g) Precaution in natural background variation.

PAGE V-2

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CONTINUE ON NEXT PAGE

## III-H-1C, CONTINUED

LA00107129

1. POLLUTANT AMOUNT(S) in sample	2. MARK NO.	3. EFFLUENT		4. UNITS		5. INFLUENT	
		(1) CONC. CHLORINE CONCENTRATION	(2) MASS CONCENTRATION	(3) CONC. CLARIFICATION	(4) CONC. CLARIFICATION	(5) CONC. PRECIPITATION	(6) CONC. PRECIPITATION
541. Arsenic, Total (7340.02.6)	X	N	<0.0002	NA	NA	NA	NA
951. Nickel, Total (7340.02.0)	X	<0.04	<0.13	NA	NA	NA	NA
1041. Selenium, Total (738.2.0.2)	X	<0.04	<0.13	NA	NA	NA	NA
1141. Silver, Total (7340.02.3)	X	<0.01	<0.08	NA	NA	NA	NA
1281. Thallium, Total (7340.24.0)	X	<0.02	<0.16	NA	NA	NA	NA
1341. Zinc, Total (7340.02.6)	X	<0.04	0.52	NA	NA	NA	NA
1441. Cyanide, Total (51.7.2.5)	X	<0.02	<0.163	NA	NA	NA	NA
1541. Phenols, Total Pheonols, Recoverable DIOXIN 2,3,7,8-Tetrachloro- dibenz-p-Dioxin (1264.01.0)	X	<0.005	<0.04	NA	NA	NA	NA
6. GEMS FRACTION-VOLATILE COMPOUNDS							
11. Acetone (101.61.0.5)	X	<50	<0.460	NA	NA	NA	NA
23. Acrylonitrile (107.13.1)	X	<50	<0.169	<0	<0.469	<0	<0.226
33. Benzene (71.13.2)	X	<10	<0.004	<0	<0.004	<10	<0.08
43. Bromoform (25.5.5.2)	X	<10	<0.001	NA	NA	NA	NA
48. Carbon Tetrachloride (25.2.5.2)	X	<10	<0.094	<0	<0.004	<10	<0.085
75. Chlorobenzene (108.90.7)	X	<10	<0.004	<0	<0.004	<10	<0.085
83. Chlorobromo-methane (21.1.83.1)	X	<10	<0.002	NA	NA	NA	NA
93. Chloroethane (23.00.1)	X	<50	<0.163	<0	<0.460	<0	<0.226
1041. 2,4-Thiophenediyl Oxid Ether (41.0.35.8)	X	<10	<0.002	NA	NA	NA	NA
1141. Chloroform (16.7.6.3)	X	21.3	0.172	0.122	<16.0	<0.136	3
1241. Dibromomethane, methylene (25.23.1)	X	<10	<0.001	NA	NA	NA	NA
1441. 1,1-Dichloro- ethane (75.14.1)	X	<10	<0.004	<0	<0.004	<10	<0.085
1441. 1,2-Dichloro- ethane (107.06.2)	X	<10	<0.004	<0	<0.004	<10	<0.085
1441. 1,1,1-Dichloro- ethane (75.3.4)	X	<10	<0.004	<0	<0.004	<10	<0.085
1741. 1,2-Dichloro- propane (75.6.5.1)	X	<10	<0.004	<0	<0.004	<10	<0.085
1841. 1,1,1-Trichloro- propane (51.27.4)	X	<10	<0.004	<0	<0.004	<10	<0.085
1941. Ethetherene (100.41.1)	X	<10	<0.004	<0	<0.004	<10	<0.085

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## EXPLANATION

1. POLLUTANT AND CAS NO. (if available)		2. MARK X		3. EFFLUENT		4. UNITS		5. INTAKE (approximate)	
a. TEST. & RE-CHARGED	b. NO. TESTED PRESENT	c. PERCENT ASSAY	d. MAXIMUM DAILY VALUE	e. MAXIMUM DAILY VALUE	f. LIVING HUMAN EQUIVALENT (If multiplied by concentration)	g. LIVING HUMAN EQUIVALENT (If multiplied by mass)	h. NO. OF ANALYSES	i. LIVING HUMAN EQUIVALENT (If multiplied by mass)	j. NO. OF ANALYSES
<b>ORGANIC CHEMICALS</b>									
1511 Hexachloroethane [67-72-1]	X	<10	<0.001	NA	NA	NA	1	NA	1
1511 Indene (1,2,3,4)	X	<10	<0.007	<0.007	<0.007	<0.007	1	NA	1
1511 Isopropylbenzene [107-92-5]	X	<10	<0.003	NA	NA	NA	1	NA	1
1511 Aspinuladine [69-10-3]	X	<10	<0.001	NA	NA	NA	1	NA	1
1511 Nitrobenzene [106-45-3]	X	<10	<0.004	<0.004	<0.004	<0.004	1	NA	1
1511 N-Nitrosoethylestrene [116-75-6]	X	<50	<0.008	NA	NA	NA	1	NA	1
1511 N-Nitrosodiphenylamine [62-18-1]	X	<10	<0.001	NA	NA	NA	1	NA	1
1511 N-Nitrosodiphenylamine [106-45-3]	X	<10	<0.004	<0.004	<0.004	<0.004	1	NA	1
1511 Phenanthrene [110-91-8]	X	<10	<0.004	<0.004	<0.004	<0.004	1	NA	1
1511 Pyrene [120-60-0]	X	<10	<0.004	<0.004	<0.004	<0.004	1	NA	1
1511 1,2,4-Triphenylene [106-12-1]	X	<10	<0.004	<0.004	<0.004	<0.004	1	NA	1
<b>ORGANIC FRACTION - PESTICIDES</b>									
1511 Alum [109-90-2]	X	NA	<0.005	<0.004	NA	NA	NA	NA	NA
1511 Alpha-BHC [110-84-6]	X	NA	<0.05	<0.004	NA	NA	NA	NA	NA
1511 Beta-BHC [110-85-7]	X	NA	<0.05	<0.004	NA	NA	NA	NA	NA
1511 Delta-BHC [151-56-9]	X	NA	<0.05	<0.004	NA	NA	NA	NA	NA
1511 Gamma-BHC [110-66-1]	X	NA	<0.05	<0.004	NA	NA	NA	NA	NA
1511 Chlordane, Technical [51-34-2]	X	NA	<0.15	<0.002	NA	NA	NA	NA	NA
1511 4,4'-DOT [56-29-3]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 4,4'-TDE [57-55-6]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 4,4'-DDT [22-54-8]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Dieldrin [66-57-1]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Alpham-Endosulfan I [115-29-7]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Delta-Endosulfan II [115-20-7]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Endosulfan Sulfate [101-01-1]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Endrin [72-20-5]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Ethyl Aldehyde [74-21-3]	X	NA	<0.1	<0.001	NA	NA	NA	NA	NA
1511 Hexachlor [76-44-3]	X	NA	<0.05	<0.0004	NA	NA	NA	NA	NA
1511 Hexachloro Spoxide [102-57-3]	X	NA	<0.005	<0.0004	NA	NA	NA	NA	NA

Table 1 - Continued									
2. MARKS		3. EFFLUENTS							
POLLUTANT AND CAS NO <i>(continued)</i>	TEST NUMBER <i>(continued)</i>	S. NO.	TEST METHOD USED	AMOUNT IN PPM TESTED	MAXIMUM TEST VALUE Detected	TEST METHOD USED	AMOUNT TESTED	TEST METHOD USED	AMOUNT TESTED
140P PCP,1,212 6140,52,10	X	X	100	<1.0	<0.008	NA	NA	NA	NA
10P PCP,1,254 1,1,107,60,1	X	X	100	<1.0	<0.008	NA	NA	NA	NA
20P PCP,1,221 1,1,104,25,2	X	X	100	<1.0	<0.008	NA	NA	NA	NA
21P PCP,1,232 1,1,104,10,5	X	X	100	<1.0	<0.008	NA	NA	NA	NA
22P PCP,1,148 1,1,102,20,0	X	X	100	<1.0	<0.008	NA	NA	NA	NA
23P PCP,1,260 1,1,106,82,5	X	X	100	<1.0	<0.008	NA	NA	NA	NA
24P PCP,1,16 1,1,106,11,1	X	X	100	<1.0	<0.008	NA	NA	NA	NA
25P Tetrachene 510,15,2	X	X	100	<5.0	<0.041	NA	NA	NA	NA
4. OTHER PARAMETERS									
Final Solids									
HEX-Chromium	X	215	1,755	NA	NA	NA	NA	NA	mg/L
Mercury	X	0.070	0.65	NA	NA	NA	NA	NA	mg/L
Total Dissolved Solids	X	34.8	2843	NA	NA	NA	NA	NA	mg/L
Total Kjeldahl Nitrogen	X	0.3	750.3	NA	NA	NA	NA	NA	mg/L
	X	<1	<0.2	NA	NA	NA	NA	NA	mg/L

## **Appendix D**

**BIOMONITORING FREQUENCY RECOMMENDATION  
AND RATIONALE FOR ADDITIONAL REQUIREMENTS**Permit Number: **LA0007129**Facility Name: **Georgia Gulf Chemicals & Vinyls, LLC**Previous Critical Dilution: **0.18%** Proposed Critical Dilution: **0.5% (10:1 ACR)**Date of Review: **04/08/04; revised 02/07/06** Name of Reviewer: **Kim Gunderson**

Recommended Frequency by Species:

*Pimephales promelas* (Fathead minnow): **Once/Year<sup>1</sup>***Daphnia pulex* (water flea): **Once/Year<sup>1</sup>**Recommended Dilution Series: **0.2%, 0.3%, 0.4%, 0.5%, and 0.7%**

Number of Tests Performed during previous 5 years by Species:

*Pimephales promelas* (Fathead minnow): **6***Daphnia pulex* (water flea): **6***Daphnia magna* (water flea): **N/A – Testing of species was not required***Ceriodaphnia dubia* (water flea): **N/A – Testing of species was not required**

Failed Test Dates during previous 5 years by Species:

*Pimephales promelas* (Fathead minnow): **No failures in the last five years***Daphnia pulex* (water flea): **No failures in the last five years***Daphnia magna* (water flea): **N/A – Testing of species was not required***Ceriodaphnia dubia* (water flea): **N/A – Testing of species was not required**Previous TRE Activities: **N/A – No previous TRE Activities**

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

**Georgia Gulf Chemicals & Vinyls, LLC** is located in Plaquemine, Iberville Parish, Louisiana. NPDES Permit LA0007129, effective February 1, 1999, contained freshwater acute biomonitoring as an effluent characteristic of Outfall 002. Once per year was the established frequency for *Daphnia pulex* and *Pimephales promelas*. The effluent series consisted of 0.08%, 0.10%, 0.14%, 0.18%, and 0.24% concentrations, with 0.18% being the defined critical dilution. Data on file indicate that the permittee has complied with the biomonitoring requirements contained in LA0007129.

**It is recommended that freshwater acute biomonitoring continue to be an effluent characteristic of Outfall 002 in LA0007129. The effluent dilution series shall be 0.2%, 0.3%, 0.4%, 0.5%, and 0.7% concentrations, with the 0.5% effluent concentration being**

<sup>1</sup> An acute critical dilution of less than 1% shall have an established monitoring frequency of once per year.

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defined as the critical dilution (the 10:1 Acute-to-Chronic ratio has been implemented because the critical dilution is less than 5%). The biomonitoring frequency shall be once per year for *Daphnia pulex* and *Pimephales promelas*.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, EPA Region 6 Post-Third Round Whole Effluent Toxicity Testing Frequencies (Revised June 30, 2000), and the Best Professional Judgement (BPJ) of the reviewer.